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REVIEW OF THE PRESENT POSITION OF INFANTILE MORTALITY.[1]

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IT has been suggested that the time is suitable for a review of the present position regarding infantile mortality, with a view to a discussion on the whole subject. Probably the most satisfactory way to do this would be to survey the progress of events since the beginning of the present century, as it is during this period that the problem has been for the first time attacked scientifically and that so much improvement has resulted in the number of lives saved. From shortness of notice I am driven to deal chiefly with South Australian figures and conditions, but probably this, too, will be the most satisfactory introduction to a fruitful discussion and will be of most service to visitors from other States. Reviewing the course of events during the past quarter of a century I would put forward the following propositions.

[1] Read at the meeting of the Australasian Association for the Advancement of Science, Adelaide, August, 1924, and published with the kind permission of the Honorary Secretary of the Association.

1. There has been a very marked and for the most part steady improvement in infantile mortality figures, which in some places has been greater than was thought ever to be possible at the end of last century.

2. Closer inspection of figures shows that this improvement has been almost entirely confined to the period of infancy later than the first month of life and has been due to greater control of post-natal environment, especially with regard to nutrition and the infections of the intestinal tract. Infections of the respiratory tract apparently remain constant.

3. Experience has shown that no one method is a cure-all, but that success depends on close attention to all the details of a child's life.

4. The mortality figures for the first month have remained practically unaltered; any change has been, if anything, for the worse.

5. The causes of death in this early period differ entirely from those in the later period; the important factors are pregnancy and the puerperium, whereas in the second period they are food and flies.

6. The methods of successful attack in the two periods must therefore be entirely different.

7. For the same definite advance in reduction of mortality in the first year of life to be made during

the next quarter of a century, as has been made in the last, we must cease to think and talk of infantile mortality, as one subject, and rather speak of: (*a*) Birth or natal mortality, including in this ante-natal and neo-natal factors, (*b*) post-natal mortality. The charts shown illustrate this.

Chart I. shows the graph of South Australian infantile mortality for the past twenty-five years. It will be noticed that there was a great fall in 1904 and that deaths have been on lower level ever since.

Comparison with Charts II., III., IV., V., VI., VII. and VIII. (Graph *B* of the report of the Departmental Committee [Trade and Customs] on Infantile Mortality) which give figures for other States, show the same fall at this period in the Commonwealth as a whole and in all the other States except Tasmania.

I have never seen a satisfactory explanation of this, although I think it is due to the general recognition of the importance of nutritional conditions. It will be remembered that the five or six years before 1902 had been drought years, with hot dry summers during which conditions for diarrhœal diseases would be especially pronounced. This would partly explain the lessened fall relatively in Tasmania. A part explanation is also found in the recognition about that time of scientific feeding of infants, thus reducing nutritional deaths.

Chart IX. (from "Practical Preventive Medicine," by Mark F. Boyd) gives the English and European figures and shows the same marked fall from 1902 onwards and the New Zealand figures show that this fall started there a little earlier.

Chart X. shows the relative proportion of the chief causes of infantile deaths in this State. The heading "prematurity, congenital debility and malformations" would be almost entirely operative in the first month of life.

This is shown by the figures underneath which give the proportion of deaths in the first month of life to those in the first year of life.

Chart XI. shows the total deaths each year in this State since 1909 compared with the total deaths from diarrhœal diseases and those from congenital causes. It will be noted that the diarrhœal curve almost exactly follows the total curve, while the natal curve steadily ascends. This is summed up in a sentence from the Registrar-General's report this year:

> This table indicates that the reduced infant mortality in recent years is not due to any improvement in the deaths under one month, but is limited to the later age-periods, the deaths from premature birth, congenital debility and defects and others which may be said to be of pre-natal origin, apparently not proving so susceptible of control as those resulting from post-natal causes.

I do not know that they are not so susceptible of control as that they have not been directly attacked.

I do not wish to dwell at any great length on the mortality of the second part of infancy for two or three reasons. Firstly, because the general principles of its control have been pretty well worked out. What remains to be done now is simply the perfecting of detail and the extension of popular knowledge. Secondly because on the milk question which is so important during this period, I may have something to say in the discussion following the later papers this morning which will deal exclusively with pure milk supply. We all agree that breast feeding is the ideal. We all recognize the value of baby clinics or schools for mothers or nursing inspectors, even though we may not pin our faith to one particular method.

In connexion with this later period the main point I wish to emphasize is that in this country the mortality of this period varies almost directly as the deaths from diarrhœa and here again we need to split things again and recognize: (i.) The toxæmic diarrhœa which seems to be due to an improperly balanced diet containing a great excess of carbo-hydrate elements, (ii.) the infective diarrhœa. The investigations of Beare in this city have shown that a large proportion of these are bacillary dysentery, the causal organism being Flexner's bacillus. He has laid down the dictum that every case of diarrhœa accompanied by the passage of blood and mucus should be regarded as bacillary dysentery until proved to be otherwise. Shearman in Perth and the workers at Walter and Eliza Hall Institute in Melbourne have shown the same thing for those cities. In taking this position we are only following the teaching of Rosenau, of America, and Fitzgerald, of Toronto, both of whom in their latest text books take the position that every baby with diarrhœa accompanied by blood and mucus should be isolated and the affection should be notified to allow of epidemiological examination. There is no doubt that this form of diarrhœa is set up by carriers and spread largely by flies.

The point which I wish specially discussed this morning, because it is, I think, the point on which we should concentrate our attention for the next few years, is the reduction of mortality in the first month of life. The machinery for action in the latter months has been provided; the public are seized with its importance; they will carry on the good work.

Members of this section now need to unite to do the same spade work for reducing mortality in the first month of life as we did in the early years of the century for nutritional cases. These cases early in infancy have so far been untouched by methods at present in use. New methods of attack must be elaborated.

If deaths in the first month are further analysed, it is found that the great majority occur in the first week of life. Their causation is, therefore, natal or ante-natal and preventive measures must be employed accordingly. Investigation shows that the two great causes at work in this field are syphilis and slovenly obstetrics.

Consider the position. The great causes of death listed in this class are prematurity, congenital debility, malformations and accidents of childbirth.

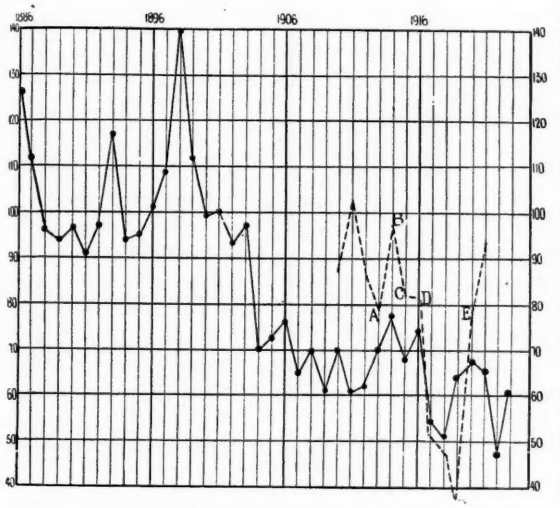

CHART I.—Showing Infantile Mortality in South Australia.

The figures in the abscissa represent deaths of infants under one year of age per thousand births. *A* = Alberton and Clanville schools for mothers opened. *B* = Birkenhead school for mothers opened, Alberton school moved to Queenstown, Clanville school moved to Exeter. *C* = Rosewater school for mothers opened. *D* = Birkenhead school moved to Peterhead. *E* = Port Adelaide school for mothers opened.

Prematurity we know is one of the most frequent results of syphilis, often in succession to a series of abortions or a still-birth. Congenital debility is often the result of the same infection or of a toxæmia of pregnancy, which means slovenly antenatal supervision. Malformations are not as yet so generally recognized to be associated with syphilitic infection in the mother, but I remember years ago seeing a maternity patient in consultation when she was delivered of a hydrocephalic monster. Subsequently after the death of her usual medical attendant, I attended her at her next confinement with a similar result. Following instructions she underwent a course of mercurial treatment from the beginning of her next and subsequent pregnancies, with the resultant birth of perfectly natural children.

In another case about that time I delivered a woman of an anencephalic monster at her first confinement and of a still-born child with imperfectly

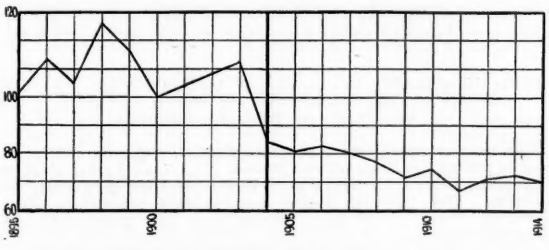

CHART II.—Showing Rates of Infantile Mortality for the Commonwealth.[1]

[1] Taken from the Departmental Committee report on infantile mortality.

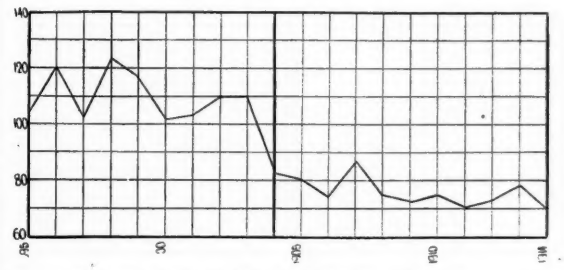

CHART III.—Showing Rates of Infantile Mortality for New South Wales.[1]

developed rectum and bladder in her second confinement. I then remembered that I had seen her with an inguinal bubo soon after marriage for which no cause had been discovered at the time. Mercurial treatment commenced early in subsequent pregnancies was followed by living children.

These were before the days of Wassermann tests and made so great an impression on me that I subsequently made such treatment a rule in any similar occurrence.

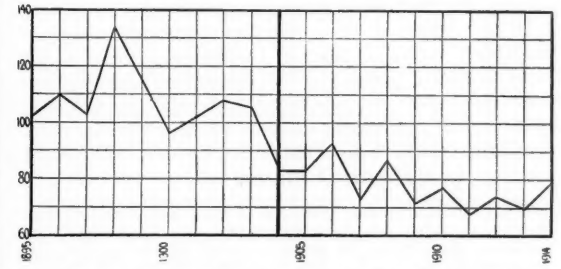

CHART IV.—Showing Rates of Infantile Mortality for Victoria.[1]

While considering this question we should not forget that the total death rate of the first month is really greater than figures show, because the figures do not include still-births. In this State still-births need not be registered and I believe the same is true in most other places. But still-births again depend most frequently on maternal syphilis or toxæmia or accidents of delivery.

In 1922 the British Ministry of Health published results of an investigation by Dr. Holland on the

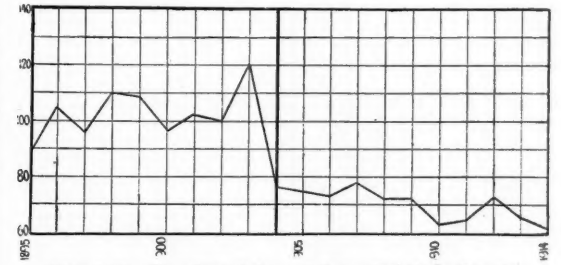

CHART V.—Showing Rates of Infantile Mortality for Queensland.[1]

[1] Taken from the Departmental Committee report on infantile mortality.

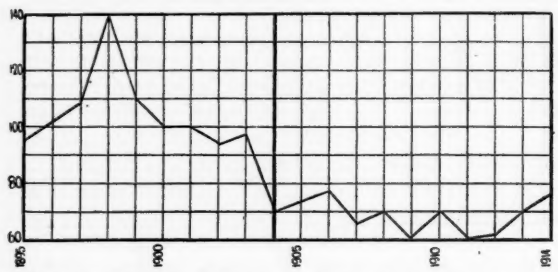

CHART VI.—Showing Rates of Infantile Mortality for South Australia.[1]

causation of fœtal death. This was based on the examination of three hundred fœtuses of viable age which were still-born.

Dr. Holland says that before his investigation he had always thought that syphilis as a cause of fœtal death had been given an exaggerated prominence and that precise work on a large material would unmask its pretensions. Contrary to his expectations his results showed that amongst the three hundred fœtuses were forty-two of proven syphilis and six of "probable" syphilis, making an incidence of 16%. There were a further fourteen cases of "possible" syphilis, that is instances in which the mother's blood yielded a Wassermann reaction but in which there was no other supporting evidence in the fœtus or placenta. These results are in close accordance with those obtained by Dr. Whitridge Williams in the United States.

Another unexpected discovery has been the extreme frequency with which cranial injuries occur in fresh fœtuses. Out of the 167 fresh fœtuses—*id est* those which died during labour—no less than 48% had tearing of the septa of the *dura mater* and cerebral hæmorrhage. The almost constant discovery of these injuries in fœtuses born dead after breech delivery is a fact of great practical importance and indicates the urgent necessity of teaching a better method of managing the delivery of the after-coming head than the one at present in vogue.

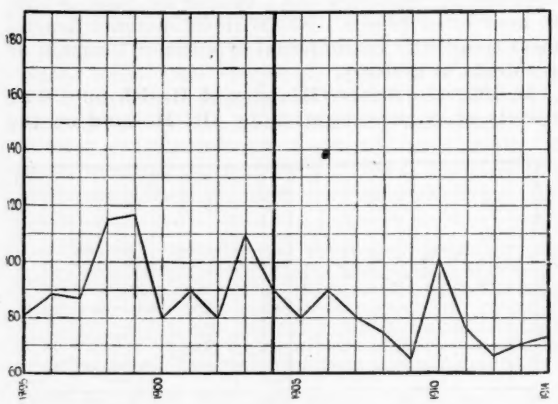

CHART VII.—Showing Rates of Infantile Mortality for Tasmania.[1]

[1] Taken from the Departmental Committee report on infantile mortality.

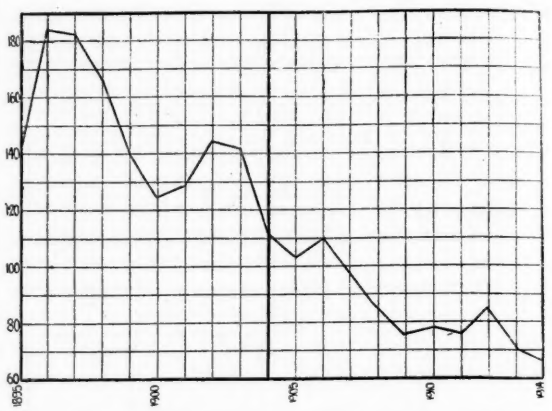

CHART VIII.—Showing Rates of Infantile Mortality for Western Australia.[1]

A generalization of great importance is that more fœtuses were killed by the complications of labour than died during pregnancy from maternal or placental disease. From the preventive point of view this is an observation of the highest importance. To begin with there were more fresh fœtuses (deaths during labour) than macerated (deaths during pregnancy); the respective numbers were 167 fresh and 133 macerated. A comparison between the number of deaths from the complications of labour, from maternal conditions, from fœtal defects and from placental states is best seen by placing them in percentage groups:

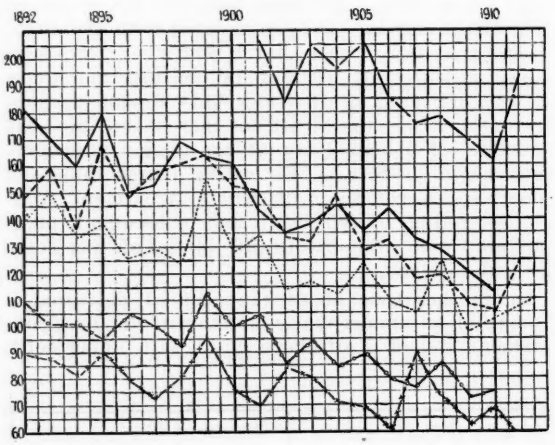

CHART IX.—Showing the Deaths of Infants Under One Year of Age per Thousand Births *per annum Exclusive* of Still-Births in Various Countries.[2]

The uninterrupted line represents France. The line of large dashes represents England and Wales. The line of small dashes represents Denmark. The line of dashes and circles represents Sweden. The line of dashes and crosses represents New Zealand. The line of large dashes and dots represents the German Empire.

[1] Taken from the Departmental Committee report on infantile mortality.

[2] Taken from "Practical Preventive Medicine," by Mark F. Boyd.

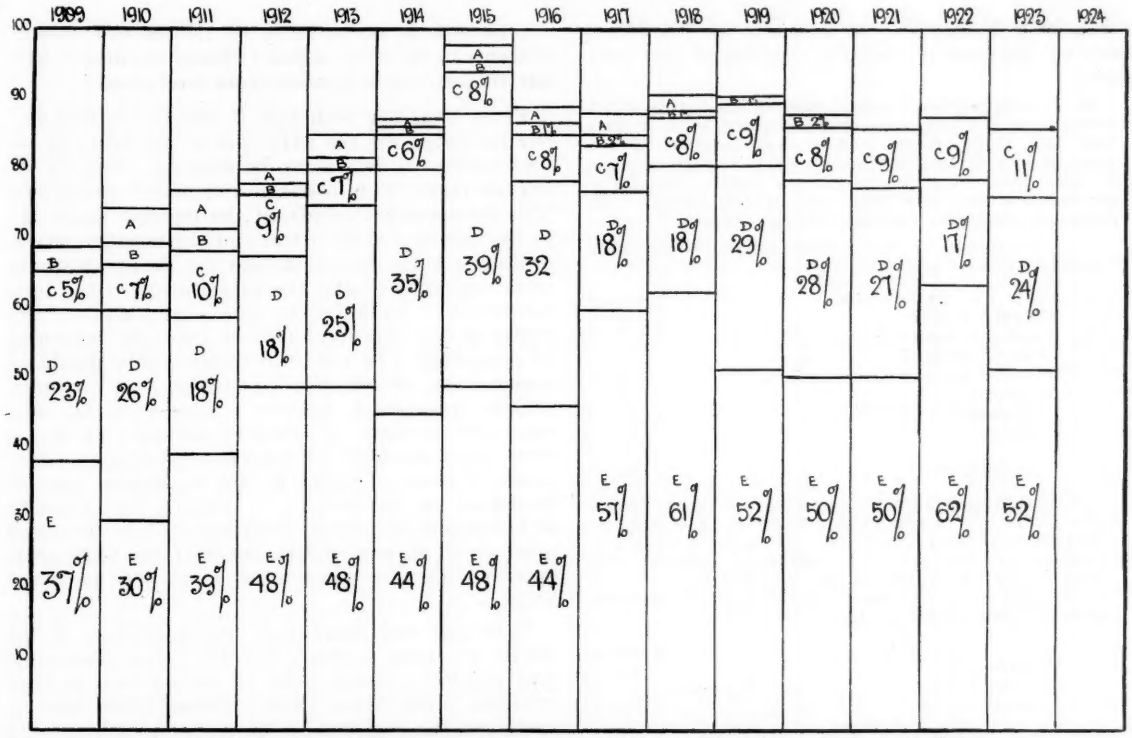

CHART X.—Showing a Proportion of Chief Causes of Infantile Mortality in South Australia.[1]
A = Convulsions. *B* = Meningitis. *C* = Bronchitis and pneumonia. *D* = Diarrhœa and enteritis. *E* = Prematurity, congenital debility and malformations.

Condition.	Frequency.
Complications of labour (including *ante partum* hæmorrhage and post maturity of the fœtus)	51%
Syphilis	16%
Toxæmias of pregnancy	10%
Chronic renal and other maternal diseases	2%
Placental states leading to relative placental insufficiency	6%
Fœtal deformities	5%
Cause of death unknown	11%

Bearing in mind these two periods, ante-natal and intra-natal, we can for the purposes of preventive treatment place cases of fœtal death into four groups:

(i.) Those, the cause of which can be discovered during the ante-natal period and can be prevented by purely ante-natal treatment. The great representative of this group is syphilis. Another example is toxæmia of pregnnacy, many cases of which can be kept within reasonable bounds or even cured by simple ante-natal treatment. Still another example is breech presentation which can be corrected by external version.

(ii.) Those, the causes of which can be discovered during the ante-natal period, but which depend for their prevention on intra-natal methods. The best example of this is contracted pelvis. If discovered early enough in pregnancy the obstetrical treatment can be planned and will be either waiting for natural labour, with the help of forceps, if necessary, or induction of premature labour or Cæsarean section. Another example is afforded by those cases of toxæmia of pregnancy which do not yield to ante-natal treatment and which must be treated by induction of premature labour. Another rare example is obstructive pelvic tumours.

(iii.) Those, the causes of which are not discoverable in the ante-natal period, but which make their presence known just before or coincidently with the onset of labour or during the course of labour. Examples of this group which are prolific of fœtal deaths, are the *ante partum* hæmorrhages. Other common ones are prolapse of the umbilical cord and cases of prolonged labour from such causes as persistent occipito-posterior presentations. In this group most of the fœtuses have cerebral hæmorrhage and tearing of the septa of the *dura mater*, consequent on delivery by forceps or version.

(iv.) Those, of which the cause so far as our present state of knowledge stands, are not discoverable or preventible by any means whatever. These include the great group in which the cause of fœtal death cannot be determined, the cases of relative placental insufficiency due to abnormal smallness of the placenta or to the destruction of a large area of placenta by infarction, those cases in which a blood clot is found behind the placenta, and cases of severe fœtal deformity such as anencephaly, hydrocephalus and œdematous states of the fœtus.

It is thus conceivable that about half the fœtal deaths are preventible; that of these about 20% (of which three-quarters are due to syphilis) could be prevented by ante-natal methods alone, about 12% depend for their prevention on combined ante-natal and intra-natal methods and about 20% on intra-natal methods alone.

The foregoing line of reasoning leads to the conclusion that ante- and intra-natal methods are very closely correlated in preventive work and that the most promising groups for attack are: (i.) the complications of labour, (ii.) syphilis, (iii.) the toxæmias of pregnancy, in order of the number of successes likely to be got.

[1] Compiled from annual reports of the Registrar-General of South Australia for Births, Deaths and Marriages.

Similarly Fitzgerald, of Toronto, in his "Text Book on Preventive Medicine" published last year says:

In the study of two hundred cases of still-births which occurred in the Toronto General Hospital between 1914 and 1920, Gallie found that it was possible in one hundred and forty-six of the histories to ascertain the probable cause. Only six of the one hundred and forty-six mothers had ante-natal care in this series. The causes of still-births were classified as follows:

(1) Condition in the mother to which still-birth could be attributed:

Complication.	Number.
Placenta prævia	16
Accidental hæmorrhage	7
Lobar-pneumonia	1
Occluded *os*	1
Eclampsia	4
Pre-eclampsic, toxæmia	16
Syphilis	7
All conditions	62

Gallie concludes that twenty-five of the sixty-two still-births in this group would have been prevented by suitable ante-natal supervision. Certainly a large percentage of the cases of eclampsia, toxæmia and syphilis are preventible causes of still-births.

(2) Still-births in which there were no apparent abnormalities in the mother:

Condition.	Number.
Monstrosities	12
Macerated fœtus, for which no cause was found	8
Habitual death of fœtus	2
All conditions	22

This group includes those in which developmental anomalies, the causes of which are at present unknown, were responsible. Among this group little can be done at present except to improve the general health of the expectant mother, where such is necessary.

(3) Still-births in mothers who were allowed to go beyond full term with resultant dystocia due to disproportion between the size of the fœtal head and the maternal pelvis: twelve.

These are practically all preventible.

(4) This group includes cases of injury to the child at birth and accidents during confinement:

Condition.	Number.
Breech version and extractions	12
Face and brow presentation	6
Forceps	14
Ruptured uterus	2
Prolapsed cord	6
Spontaneous delivery with basal hæmorrhage	6
All conditions	46

The comment by the author of the paper on this group is as follows: Attention is here once more drawn to the fact that the operation of forceps, especially high forceps, is not one to be lightly considered. Second stage, low forceps is usually a safe procedure and is quite justified under certain well-defined conditions. High forceps is one of the most abused operations there is, and is usually accompanied by disastrous results for the mother and child.

(5) A group of cases of still-birth due to ill-defined causes: seven.

Of the total here analysed it is believed that thirty-seven or 25% were preventible. Clifton Edgar in an analysis of five hundred still-births in New York concluded that 20% might have been prevented by adequate ante-natal care.

I have dealt rather fully on this matter because it seems to me to be a point closely connected with our subject which is sometimes overlooked.

From what has been said it will be realized that our campaign for the reduction of mortality in the first month of life must be directed towards the improvement of ante-natal and natal conditions. This means a revolution in the popular mind and in the minds of a great many of the members of the medical profession. It means the dropping of the term "midwifery" and the substitution of the term "obstetrics," including in this supervision of the health of the expectant mother from the beginning of pregnancy. In our own country this should be easier than in older civilizations and in more thickly populated centres. Inanition amongst expectant mothers is unknown amongst us nor is there the same need for reform regarding excessive hours of labour. There is just as great a need as elsewhere for supervision to control the toxæmias of pregnancy, to prevent intercurrent infections and most of all to prevent the death of the child from specific infection contracted from the maternal source.

This does not mean only the education of the public in these matters, but the more systematic and regular training both of nurses and medical students along these lines. Unless great care is exercised the registration of midwives will attend to a perpetuation of the old system of mere attendance at a confinement being sufficient. Moreover, the obstetric training of students must be amplified so that they supervise beforehand the patients whom they subsequently attend in labour and the accidents from precipitate or unwarranted interference in labour must be emphasized. The effects of such accidents on the mother is one of the reasons why I favour the union of the teaching of obstetrics and gynæcology, for so much gynæcology is a consequence of bad obstetrical management. Our particular concern is with the effects of such accidents at birth on the life and health of the child not merely early death, but many cases of diplegia and similar conditions possibly depend on such accidents.

When members of our profession or of the public oppose the cost of ante-natal clinics because of the few mothers whose lives might be saved by such means, we can put forward an additional argument in the lives of the children that would be preserved. From this side we can bring strong support to the movement for better provision for mothers in the way of ante-natal clinics and maternity hospitals. A movement is already on foot in Sydney for a chair of obstetrics; Melbourne is working in the same direction and in this University a large part of a recent bequest to the Medical School has been set aside for the reorganization of the teaching in the obstetric and gynæcological departments along these lines as soon as the Government provide the building necessary.

There is one other fact that must not be lost sight of. If we are to press for this ante-natal super-

vision, it is quite certain that the average householder will not be able to stand the increased fees that must necessarily be charged by the medical profession for attendance on maternity cases. I see no way by which this objection can be met except by the State paying for such work. This is an additional argument for the resolution of the Federal Committee of the British Medical Association which urged the Federal Government instead of spending more money on maternity bonuses as is advocated in certain quarters, to devote the money to the subsidizing of all hospitals possessing ante-natal clinics and properly equipped maternity wards. Members of this section should assist in all such movements.

To sum up I would urge as regards this special point:

(1) Emphasis on the distinction between natal or neonatal causes of death and post-natal causes.

(2) Compulsory registration of all still-births if of viable age.

(3) The continued agitation for increased facilities for ante-natal care and properly equipped maternity wards.

(4) Continued emphasis on the thorough training of medical students and nurses in obstetrics, including in that term supervision of the mother from early pregnancy to a month after delivery.

(5) Education of the public on the necessity of expectant mothers demanding such ante-natal supervision and proper natal care, so that these clinics may not be empty when established.

(6) Continued emphasis on the necessity for breast feeding and pure milk and avoidance of infection in the first year of life.

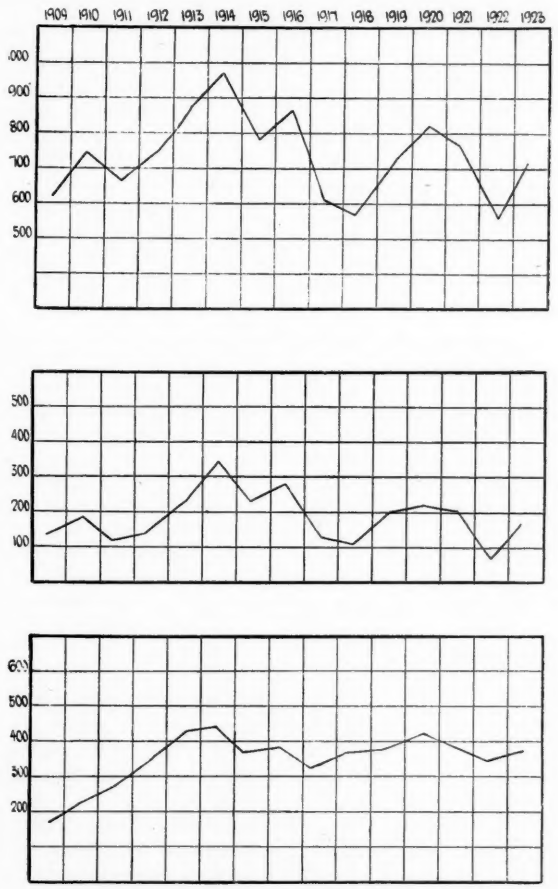

CHART XI.—Showing Infantile Mortality in South Australia.[1]

The upper of the three graphs represents the total number of deaths. The second graph the proportion of deaths from diarrhœal diseases. The third graph represents the proportion of deaths from congenital causes.

[1] Compiled from annual reports of the Registrar-General of South Australia for Births, Deaths and Marriages.

HÆMORRHAGIC DISEASE OF THE NEW-BORN.

By DOUGLAS GALBRAITH, M.D. (Glasgow),
AND
J. C. LEWIS, M.B., B.S., B.Sc.,
Melbourne.

HÆMORRHAGES occurring during the first few days of life have been classified as follows:

1. Traumatic, from obstetrical or surgical interference.
2. Accidental, as from insecure tying of the cord.
3. Spontaneous, (*a*) symptomatic - sepsis, syphilis, hæmophilia; (*b*) idiopathic, or those due to the hæmorrhagic disease of the new-born.

The outstanding feature of this last disease is hæmorrhage, either internal or external, which usually commences between the second and the fifth days after birth and rarely lasts more than five days.

ÆTIOLOGY.

There has been much conjecture on the causation of this condition. Some observers consider that there is always a gross pathological lesion, usually in the gastric or intestinal mucosa, this having been described as long ago as 1827 (by Cruveilhier). Others have made careful search without being able to find any such lesion. Helmholz[1] looks on the condition as infective and urges that more attention be given to the microscopical appearance of the mucosa. In a recent communication Kennedy[2] describes a case in which although necropsy did not reveal any appearance suggestive of ulcer, a careful microscopical examination of the first part of the duodenum revealed a definite ulcer. This observation appears to be of considerable value and a careful microscopical examination may possibly reveal ulceration in a majority of these cases.

On the other hand much attention has been devoted to the investigation of the infants' blood in the hope of finding some abnormality which might account for the occurrence of hæmorrhage. Research has centred on the blood coagulation in infancy and many consider an interference with the usual clotting of the blood to be the main causative factor in the production of bleeding.

Rodda[3] has shown that in the normal infant there is prolongation of the coagulation time and bleeding time from the first to the fifth days of life and then a gradual return to the normal, which is reached on the tenth day. He regards hæmorrhagic diseases of the new-born as an exaggeration of this phenomenon.

Howell[4] thinks that, according to his views on the rationale of blood coagulation, the disease must be caused by the excess of anti-thrombin. But Whipple[5] found that, although in the hæmorrhage of icterus, the anæmias and hepatic disease such an excess of anti-thrombin does exist, in hæmorrhagic disease of the new-born this could not be demonstrated. On the other hand there was a definite deficiency of pro-thrombin, a deficiency probably due to a defect in the blood platelets.

Gelston[6] and others support these findings.

That obstetrical interference plays any great part in the ætiology is doubtful, since many cases appear in infants born after an easy, normal labour. It is questionable if, even in cerebral hæmorrhage, active obstetrical interference is such a prominent factor as has been thought. Cruikshank[7] in a large series of autopsies on infants dying soon after birth, found cerebral hæmorrhage to be present in about 60% and it was present almost as often in infants born after normal labour as in those delivered with forceps or naturally after a long tedious labour. It is logical, therefore, to conclude that cerebral hæmorrhage is frequently a manifestation of hæmorrhagic disease. One factor on which, in our opinion, sufficient stress has not been laid in discussing the ætiology of these hæmorrhages is the degree of asphyxia to which every infant is subjected during parturition. We have been unable to find any record of hæmorrhages, either cerebral or intestinal, occurring in an infant born at an early stage of labour by Cæsarean section.

Diagnosis.

It is perhaps unnecessary to mention that when a breast-fed infant vomits blood, a careful examination of the mother's nipples should first be made to exclude the possibility of a fissure there being the source of the blood. Failure to do this may cause much needless excitement.

To test the coagulation and bleeding time of the infant's blood and thus to verify the presence of the hæmorrhagic tendency, two simple tests are given by Cruikshank.[8] In the first a drop of blood from a puncture in the heel of the infant is allowed to flow into a watch glass containing a small lead shot. This is covered by another watch glass to prevent evaporation and the shot gently rolled about. In the normal infant the shot will cease to roll in five to ten minutes, but in cases of hæmorrhagic disease this time may be prolonged to half an hour or more. The second test is to prick the heel and to remove the drops of blood with filter paper as they appear. If they continue to do so for more than five minutes there is an increase in the bleeding time.

Treatment.

Apart from local measures and relief of symptoms due to cerebral lesions, treatment directed toward the control of the hæmorrhage may be discussed under two headings: (i.) By means other than the injection of blood, (ii.) by the injection of blood.

The first heading can be quickly dismissed. Horse and hæmoplastic serum, calcium and adrenalin have all been used, but it is doubtful if improvement follows, except in very mild cases. In this respect it must be noted, as Holt[9] pointed out, that the disease is often self-limited, with in many cases a natural tendency toward cure. Lately Still has advocated the administration by the mouth of a 2% (ten grains to the fluid ounce) solution of glucose.

We shall now deal in some detail with the injection of blood. Until this treatment was adopted, the mortality from the hæmorrhagic disease of the new-born was from 50% to 60%; whilst it has now fallen to 10% to 20%. This injection of blood may be beneficial in two ways. In the first place it supplies the urgent need for the lacking blood element and secondly it may stimulate the infant's tissues to produce that element. The injection may be given intra-muscularly or intravenously.

Intra-Muscular Injection of Blood.

The intra-muscular or subcutaneous method has been widely used and in many cases with good results. Floyd Clarke[10] describes a series of cases in which this method was completely successful. The blood is drawn from donor and injected immediately into the tissues of the infant usually into the buttocks or triceps or in the mid-scapular line. Although at times very small amounts have appeared to be beneficial, for example in a case described by Montague Dixon, in which he only used three cubic centimetres of blood, the amount usually given is about thirty cubic centimetres and this is repeated as often as is necessary. Rodda recommends that if the blood from the first donor is not curative, a second donor should be used.

Intravenous Injection of Blood.

Although many cases respond to intra-muscular injections, there are others in whom in spite of this treatment the condition fails to improve and fresh hæmorrhages occur. These infants go down hill rapidly and, when we remember the estimate that the loss of one ounce of blood to a new-born infant is equal to the loss of one pint to an adult, it is not surprising that they become so acutely ill. Moreover, as Holt remarked, the infants who die, rarely survive more

than three days and frequently only one. It is imperative, therefore, that the treatment be immediate and transfusion of blood becomes a necessity. Formerly unchanged blood was used, but the difficulties of technique were so great that now citrated or oxalated blood is almost universally employed. The original opinion that citration of the blood would prolong the coagulation-time of the receiver has been shown to be erroneous.

Several points of practical importance in using this method need to be discussed.

Is Blood Grouping Necessary?

Opinions on this point vary. Hurst,[11] whilst advocating grouping, states that the blood of 55% of infants will match that of either parent. Chavasse,[12] Happ[13] and Jones[14] give evidence that the blood group is frequently established early in infancy. The most useful observation, however, is that of Biasi[15] who "typed" the blood of a hundred mothers and their children and by cross testing the blood of mother and child found that in no case were the maternal corpuscles agglutinated by the serum of the infant. This held even where the blood of the mother and of the child belonged to incompatible groups. This observation confirms the findings of most clinicians that grouping is unnecessary where using the parents' blood.

Choice of Donor.

Falls[16] is of the opinion that the mother's blood frequently gives better results than that of the father. It is well to try another donor if the improvement is not rapid.

Amount of Blood.

A good working rule is that given by Bruce Robertson[17] who states that the amount of blood should not exceed thirty cubic centimetres for each kilogram of infant's body weight, so that from one hundred to one hundred and fifty cubic centimetres of blood should be injected.

The Citration.

A 2% solution of sodium citrate, as used by Berghausen[18] is generally recommended in the proportion of ten cubic centimetres of citrated solution to one hundred cubic centimetres of blood. When mother's blood is used, Falls[16] finds that a slight excess of citrated solution is necessary.

Site of Injection.

The superior longitudinal sinus was formerly most used, because of its accessibility. Several workers, however, point out the danger of this route. Perforation of the sinus, especially of its lateral walls, can readily occur and it must be remembered that citrated blood so effused will not tend to clot and cicatrize as would unchanged blood. There is always an element of doubt as to the exact position of the point of the needle, even when a "box" is used. Furthermore, the scalp is difficult to sterilize.

Sidbury[19] described the successful transfusion through the umbilical vein in an infant four days old. Obviously the method has distinct limitations and the rate of transfusion must necessarily be slow.

The external jugular vein is difficult to keep steady for injection although Falls used this site extensively. He has devised a board which fits over the infant's neck and keeps the head from moving.

The internal saphenous vein, where it crosses the internal malleolus, was used by Bruce Robertson, being exposed by an incision across its course. We have no experience of this method.

The median basilic vein at the elbow has been used by various writers; the vein, however, is small, hard to define and the rate of transfusion is slow.

The saphenous vein in the thigh has generally been avoided principally on account of the danger of the wound being soiled with urine or fæces. It was successfully used in an instance described below. More recently, a posthumous article of Bruce Robertson[20] describes a very practical method of using this vein; in his cases the cannula was passed through the saphenous vein into the femoral; this method gives a good rate of transfusion and the continuity of the femoral vein is not disturbed, thus avoiding any injury to the circulation of the limb.

DESCRIPTION OF CASE.

At 1 p.m. on March 2, 1924, a *primipara* aged thirty-seven years, was delivered by one of us (J.C.L.) of a male child of healthy appearance weighing 3.6 kilograms (eight pounds). The labour was long and tedious and was terminated by a low forceps operation. Nothing abnormal was noticed until 6 a.m. on the following day, when the infant vomited a small quantity of blood. During the next few hours several motions containing blood were passed. An injection of two cubic centimetres of "Hæmoplastic serum" was given and repeated two hours later, but in spite of this, fresh hæmorrhages occurred. At 3 p.m. twenty cubic centimetres of blood from the father were injected intra-muscularly and every half-hour oral administrations of a 1‰ solution of adrenalin hydrochloride commenced. There were several more bowel hæmorrhages in the next hour or two and by 5.30 p.m. the infant looked very ill. Twenty cubic centimetres of blood from a nursing sister were given into the tissues of the abdomen and one hundred cubic centimetres of hypotonic saline solution into the submammary regions. Temporary improvement followed, but during the evening there were three or four fresh hæmorrhages and by 11 p.m. the baby was *in extremis*, blanched, restless, with respirations of ninety to the minute and a barely perceptible pulse. He was obviously dying and, as a last resource, we decided to give a transfusion. The saphenous vein in Scarpa's triangle was exposed (by J.C.L.) and one hundred and twenty cubic centimetres of the father's blood (ungrouped) in 2% citrated solution were injected, a moderately fine hypodermic needle and a twenty cubic centimetre glass syringe being used. The effect was really remarkable and before the transfusion was finished the infant's skin was pink again, his respirations forty to the minute and his pulse distinctly felt. Very soon afterwards he went off into a sound sleep. Next day one dark stool was passed, probably consisting of blood effused into the bowel before transfusion and thereafter the infant remained normal in every respect, except perhaps for a degree of pallor which became apparent about four days later. The wound, which was sealed with collodion, healed rapidly. It may be worthy of mention that the mother developed a labial abscess which was incised twenty-four hours before the onset of labour. This might supply a possible ætiological factor. The point of greatest interest in this case appears to us to be that there was a direct comparison between the efficacy of the intramuscular and intravenous methods of blood injection. In

spite of the intra-muscular injections the infant was obviously dying and there is, in our opinion, no doubt that the transfusion saved his life.

Conclusions.

The following are the conclusions drawn on the treatment of hæmorrhage occurring in the newborn.

1. Methods other than the injection of blood are, except in mild cases, of little service and valuable time may be lost in waiting.
2. Injection of whole blood (thirty cubic centimetres) should be given immediately into the buttock and unless definite improvement follows within an hour, this should be repeated, another donor being used.
3. If this does not produce rapid improvement, the indication is for an intravenous injection.
4. The available evidence strongly favours the view that, when the parent's blood is used, grouping is unnecessary.
5. It is recommended that one hundred to one hundred and fifty cubic centimetres of citrated blood be given, ten cubic centimetres of 2% sodium citrate solution to one hundred cubic centimetres of blood being used. If the mother is in moderately good condition, she is probably the better donor.
6. The saphenous vein in the thigh is a useful site for injection and was successfully used in the case described.

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FRACTURE OF THE FOREARM.

By A. B. K. Watkins, M.S. (London), F.R.C.S. (England), *Newcastle, New South Wales.*

Dr. H. Lister's letter in The Medical Journal of Australia of March 21 opens up a most important subject.

Before I took a special interest in aural surgery and whilst clinical assistant to the London Hospital Out-Patient Department I made an attempt to solve the problem of fractures of both bones in the middle of the forearm with considerable success.

Dr. Lister's admission that he has never been able to avoid pronounced angular deformity is, I think, an admission that inefficient splints were

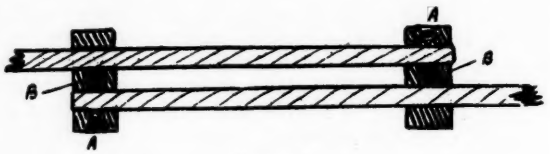

Figure I.

tried too long before operative measures were instituted. My efforts were directed against the patient ever coming to operation at all and in nearly every case the method used secured this and also good functional and anatomical results.

The great difficulty was to find a splint which would apply adequate extension and I was convinced that this was what was required. In several cases it was found that manual extension under general anæsthesia produced apparently good alignment, but as soon as this was relaxed the deformity recurred. I was unaware at that time of the fact that Robert Jones's flexed humerus splint could be

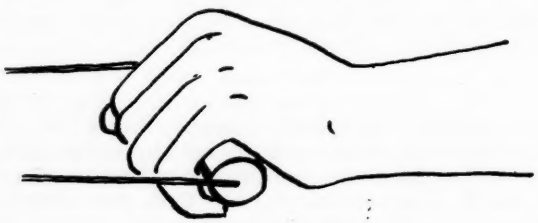

Figure II.

used for extension of the forearm by using a rubber band across the front of the upper arm low down (see Hey Groves's "Modern Methods of Treating Fractures") and I designed a splint which I still think is even more efficient for the purpose under discussion.

The splint (see Figure III.) is made of six millimetre (quarter inch) mild steel or iron rod, which can easily be bent to suit the individual case, round two twelve millimetre (half inch) diameter rods clamped in a vice. The principle is explained thus. Two pieces of rod are each bent into the shape of a rough U. They are placed along

the forearm so that the curved end of one U lies behind the olecranon and the other lies beyond the hand, while there is considerable overlap of the arms of the U. Now if the ends of the overlapping arms are pulled together, as in this case by a spring, the curved ends of the U will fly apart and if the wrist and upper forearm are connected to the corresponding parts of the two U's, extension with be exerted where required. This is how the splint works and the principle is illustrated in Figure I. The ends of the U's are fixed to brass blocks by the grub screws *A*, while the overlapping part of the arms of the U's slide loosely through tunnels in the blocks. On the sides of the brass blocks are the studs *B* and a spring is tied between them. In my splint the spring encircles both overlapping limbs of the U and this makes a neat job of it and saves space.

The curved ends of the U are modified for the attachment of cords for extension from the limb. The upper one is also modified so that after the

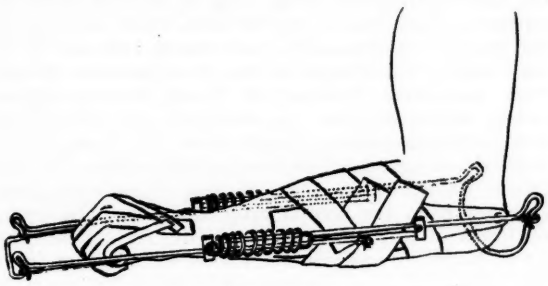

FIGURE III.

first week the elbow can be passively extended without the metal rod impinging on the back of the upper part of the arm.

At first extension was taken from the skin through strapping, but owing to the two systems of strapping being so near together, much of the extension was wasted on the skin between them. It was found better to strap the closed hand over a wooden roller (much more firmly than is shown in the illustration). This does not damage the ligaments of the wrist as might be at first thought any more than leg extension damages the knee joint in fracture of the thigh. It is interesting to note that in each case there will be slight strain on the ligaments. In the knee because the *adductor magnus* is inserted into the lower end of the fractured bone and in the wrist because of the similar insertion of the *brachio-radialis*. In the illustration the forearm is shown pronated, but supination gives better results.

In practice it is found an advantage to make the splint as narrow as possible.

The amount of extension is conveniently measured by calibrating the springs first on a wooden stick (not shown in illustration) which is then tied inside the spring and the amount may be read off as in a spring balance. The total of the two sides is the total extension. Generally an extension weight of 2.7 kilograms (six pounds) is ample.

The arm is supported in the splint by flannel slings from side to side. These were conveniently held in place by small paper clips similar to the large ones so often used for the same purpose on a Thomas's leg splint.

In all cases the immediate cessation of pain after application of the splint was most noticeable. In one case in which the first application of the splint secured perfect alignment, the patient had had five general anæsthetics under each of which apparent reduction was secured.

I do not wish it to be taken from these remarks that I consider this splint necessary for all fractures of both bones of the middle of the forearm. I do not. Occasionally, especially if the fractures are quite or very nearly transverse, they can be treated on anterior and posterior wooden splints, but if they do not remain reduced after the first reduction nothing lies between the patient and a terrible deformity except extension or operation.

AN OUTBREAK OF MEASLES ON AN IMMIGRANT SHIP.

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AND
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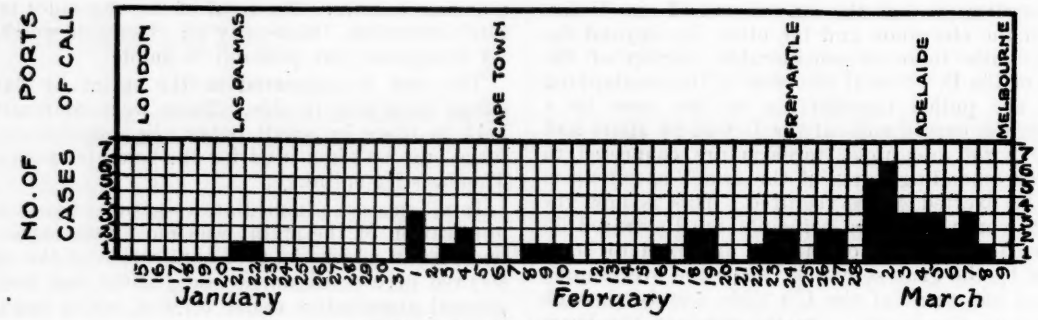
RECORDS relating to maritime epidemiology seldom appear in medical literature, although the conditions on a ship at sea offer an almost unique opportunity for studying the natural history of any infectious disease. An outbreak of measles on an immigrant ship, recently arrived in Australia, is reported, not so much as presenting any outstanding features, but as indicating the opportunity that ships' surgeons possess of observing the sequence of epidemiological events in a known community living for the time being under conditions free from many of the extraneous circumstances that so often mask the origin and course of an epidemic on shore.

The vessel is a British steamship of 6,975 tons register, well found and carrying one-class passengers, mostly British immigrants, to Australia. The vessel left London on January 15, 1925, called at Las Palmas on January 21, Cape Town on February 6 and arrived at Fremantle on February 24, Adelaide on March 4, Melbourne on March 9 and Sydney on March 14. There were on board on arrival at Fremantle a crew of two hundred and ten with eight hundred and sixty-six passengers, including some one hundred and fifty children. The vessel was inspected on arrival at each Australian port, limited pratique only being granted.

On leaving London no sickness existed on board. On January 21, 1925, when six days at sea, an



GRAPH.

infant developed a measles rash and inquiry elicited the fact that a sister of this infant had suffered from measles "some weeks" prior to embarkation. A second case in a three year old child of another family was reported on the following day, January 22. On February 1, three children were discovered each presenting a typical measles rash. The sequence of these and of subsequent cases according to the date of discovery of the rash, was as follows:

Date.	Number of Cases.	Date.	Number of Cases.
February 1, 1925	3	February 24, 1925	2
February 3, 1925	1	February 26, 1925	2
February 4, 1925	2	February 27, 1925	2
February 8, 1925	1	March 1, 1925 ..	5
February 9, 1925	1	March 2, 1925 ..	6
February 10, 1925	1	March 3, 1925 ..	3
February 16, 1925	1	March 4, 1925 ..	3
February 18, 1925	2	March 5, 1925 ..	3
February 19, 1925	2	March 6, 1925 ..	2
February 22, 1925	1	March 7, 1925 ..	3
February 23, 1925	2	March 8, 1925 ..	1

There were no further cases discovered on board after March 8, 1925. A total of fifty-one cases was discovered, the surgeon stating, however, that he was convinced that a number of cases were not reported to him, although no further cases were discovered on inward medical inspection at each port. Clinically the cases were typical morbilli, although the average duration of the rash, as reported by the surgeon, was only three and a half days. All cases were mild, quickly proceeding to convalescence without any complications or sequelæ.

All the cases occurred amongst passengers quartered on the after shelter deck, with the exception of two passengers from cabins on the promenade deck. On discovery the patients were isolated in the ship's four hospitals and in four after-cabins specially reserved for measles cases. After the removal of a patient each cabin was fumigated. The vessel was at Cape Town for twenty-four hours, all persons being allowed ashore with the exception of those suffering from the disease. No undue prevalence of measles was reported on the bill of health issued to the vessel at Cape Town. According to the mortality statistics available for reference, measles was prevalent throughout England and Scotland during December and January.

The available particulars of the outbreak bring out an interesting feature in the sequence of discovery of cases, indicated in the graph. From the date of discovery of the rash in the two primary patients, there was a gap of nine clear days until the crop of six secondary cases which extended over four days. The illness of the three patients whose rash was dated February 8, 9 and 10, was apparently either delayed in discovery or they were infected from missed primary cases which may have existed on board. The five patients taken ill between February 16 and 19, appear to have been infected from the second crop of cases. The main outbreak of thirty-four cases, dating from February 22 to March 8, apparently relates to infection from the crops of cases discovered between February 8 and 10 and February 16 and 19.

It is difficult to explain the extension of the infection in the three fairly definite and successive crops of cases. It is obvious that isolation of patients on the appearance of the rash would have little or no bearing on the sequence of events. Nor is an explanation to be found in the available information as to distribution of infections by cabins or in family groups, although one family produced nine infections between February 26 and March 4 as follows: February 26, two cases; February 27, one case; March 1, three cases (includes mother); March 2, two cases and March 4, one case (father).

It may be that the course of the outbreak was merely an arithmetical progression of infection amongst exposed susceptibles, governed by conditions of social intercourse on board. On the other hand, if complete records were only compiled by the surgeon when the vessel came under quarantine observation at Fremantle on February 24, then the whole history of the sequence of cases is useless for the purposes of epidemiological analysis.

The course of measles epidemics amongst isolated communities and in military camps has been reported by numerous observers and a fairly complete bibliography is available, appended to the papers published in *The Proceedings of the Royal Society of Medicine* between 1918 and 1921 and relating to the periodicity of measles.[1] In addi-

tion, Warren Vaughan has published some graphs showing the incidence of measles in the United States army camps.[2] The outbreak here reported is small and the records are incomplete, but an indication is given that ships' surgeons have at hand opportunity for observation and record under conditions in many ways analogous to those of the laboratory investigations carried out by Topley into the behaviour of infection introduced into a controlled mouse population.[3]

The compilation of the necessary records by a ship's surgeon bears a definite relationship to the control measures to be adopted on board. Following the discovery of a primary case of measles, the procedure outlined below would meet all general requirements and could be modified according to circumstances and the initiative of the surgeon and the ship's officers.

The steps to be taken are: (1) Compilation of a census of all children on board, recording name, cabin number, destination, age, sex and history of previous attack of measles.

(2) Consultation with the master of the ship in regard to tentative provision for dealing with an outbreak, considering the existing facilities for isolation in the ship's hospital or in cabins that can be specially isolated, situated preferably aft, away from the ship's general traffic and opening if possible to an open deck.

(3) Daily record of each case, showing exact time of onset and nature of initial symptoms.

(4) The relationship in terms of cabin accommodation or possibility of contact of each patient to each of the previous patients.

(5) A daily inspection of all children under fifteen years of age, particular attention being paid to the susceptible population for the initial indications of measles.

(6) Isolation of each patient on discovery of initial symptoms and such provision as may be available for dealing with susceptible contacts.

If such a programme be adopted, on the arrival of the vessel in port cooperation with the port health authority is at once insured and the records are complete for the initiation of any necessary action to safeguard the shore population, to deal with patients or contacts landing at that port and to facilitate the clearance of the ship by the health authority. Moreover, similar compilation of accurate and detailed records for each infectious disease would enable port health authorities to obtain complete statistics of disease outbreaks on ships at sea and would develope along sound lines the study of maritime epidemiology.

So far this field of maritime epidemiology has been little exploited, excepting the records of the behaviour of influenza on shipboard compiled by the Australian Quarantine Service during the 1918-1919 pandemic.[4] The analysis of records relating to the course of outbreaks on ships at sea would in the mass lead to a clearer understanding of the laws governing the rise and fall of epidemics, first mathematically expressed by Farr and more recently studied in detail by Brownlee and other English workers.

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Reports of Cases.

AN INTERESTING PROBLEM IN FORENSIC MEDICINE.

By W. A. T. Lind, M.B., B.S. (Melbourne),
Kew, Victoria.

In The Medical Journal of Australia (September 27, 1919, issue) I reported under the heading, "An Interesting Problem in Forensic Medicine," three cases of solitary ulcer in the ileum found *post mortem* in insane patients who died from injuries caused by violence. In two of these cases the ulcer had ruptured causing general peritonitis and death and there were fractures of the ribs and bruising of other parts, but the abdominal wall over the ulcer showed no sign of bruising. These three patients died in 1917, 1918 and 1919 respectively and as the ulcers were responsible for the cause of death in two of them and were associated with injuries which caused death in the other, they naturally came in for considerable discussion.

The question was "What relation had the ulcers to the other injuries?" Reference to textbooks on forensic medicine gave no help in the matter, although instances of rupture of the intestines from blows on the abdomen are fairly common. I wrote to Professor Glaister, the English authority on medical jurisprudence and toxicology, and he replied that he had not met with this pathological condition. I am now able to report a similar occurrence of the same type found *post mortem* in a patient from Mont Park and as the *post mortem* examination was made at the Melbourne City Morgue, I was able to show the ulcer to Dr. Mollison, the lecturer in medical jurisprudence and toxicology at the Melbourne University. I am indebted to Dr. Cade, of Mont Park, for the clinical notes of the patient's accident and for his assistance in obtaining all the information which might have any bearing on the occasion.

Clinical History.

F.J., aged seventy-three years, slipped and fell down stairs on December 5, 1924; no obvious injury was found. On December 6, 1924, he did not complain of any pain. He was very deaf and it was very hard to obtain any information from him as his usual conversation consisted of a torrent of abuse. His pulse was good and his skin somewhat hot.

On December 7, 1924, the condition on examination was the same as on the previous day.

On December 9, 1924, he was reported as looking ill and on examination he was found to be perspiring freely, extremities becoming cold and the abdomen tense. He flinched on palpation. Later on he vomited and died at 8.40 p.m..

Post Mortem Notes.

The body was that of a senile male, cyanosed around neck and head. A slight bruise was present on the left shin. The left *tunica vaginalis* was swollen.

The aortic arch was atheromatous and the abdominal aorta showed signs of calcification. The mitral valve was free from disease, but the aortic cusps were rather slack. The coronary arteries were thickened concentrically. The spleen was very large and soft. The thyreoid gland was wasted. The trachea was normal and the lungs free from consolidation. A slight degree of bronchitis was present. The liver was large, pale and soft. The stomach was normal. The supra-renal bodies were normal.

Recent general peritonitis had been caused by the perforation of a solitary ulcer of the ileum, acute in character and situated about 22.5 centimetres (nine inches) from the caecum. The ulcer was about five millimetres in diameter. The kidneys were tougher than normal, but stripped cleanly. The bladder was clean. The left *tunica vaginalis* was very thick and contained a hæmatocœle in the midst of which appeared to be the remains of a testicle.

The calvarium was thick, not eburnated. The dura was thick, not adherent. The *pia mater* was hazy, not adherent. The ventricles and convolutions were consistent with senility. The vessels at the base were thickened. The pattern was good. The ependyma was normal. No gross lesion was seen on section.

The cause of death was seen to be general peritonitis and perforated ulcer of the ileum.

Comment.

In this case as in the other three, there is a history of severe injury. In the cases reported in 1919 there were fractures and injury to soft parts. In this case the contents of an old thickened *tunica vaginalis* (whatever they were), had been contused with considerable extravasation of blood which could not be seen through the thickening of the *tunica vaginalis*. In all these cases, therefore, there would be absorption into the general circulation. The patients were all insane and therefore equal in that respect also. An analagous condition in the duodenal ulcer following some cases of burns comes to the mind in connexion with this problem, but the site of selection is in the duodenum. In these cases the site of selection is the one common to typhoid, tuberculosis and to typhoid perforation. These, however, are associated with hyperplasia of the lymphoid tissue, whereas in these cases there was no sign of lymphoid tissue activity. The rarity and the inexplicability of the lesion justifies more than passing comment.

Reviews.

A HANDBOOK ON MEDICINE.

THE fifth edition of a "Manual of Medicine" by Monro is clearly printed on stout paper and it is of a convenient size.[1] The book is divided into twelve sections, one of which is on diseases of the skin.

The teaching with a few minor exceptions, is sound, but in many cases recent investigations and ideas are omitted or only briefly mentioned. Notable exceptions are found in the article on diseases of the liver where the work of McNee is freely quoted and in that on the kidneys where McLean's work is introduced.

The first section of the book which comprises about two hundred and sixteen pages, is devoted to specific infectious diseases. After a short but sufficient account of fever and immunity and a general description of infectious diseases the author describes the various specific infectious diseases in detail. Most of the articles are short and although from some points of view this may be commendable, the value of the book would be increased in many cases by the inclusion of more detailed information. In the preface attention is drawn to the inclusion of new articles on lethargic encephalitis and tularæmia. The article on the former is condensed and in view of the difficulties in diagnosis often encountered a fuller discussion of symptoms, especially in the mild cases which are liable to be overlooked, would be helpful. Differential diagnosis is omitted. The article on tularæmia is brief, occupying almost eight lines.

Treatment is included in each article, but in many cases it is not given very fully and in some conditions the treatment recommended is not that usually accepted here. An example of this is seen in the treatment of malaria where the rather free use of the intra-muscular method of giving quinine is advocated. Another example of treatment which is unlikely to meet with approval in Australia is found in the article on hydatid disease where it is stated that aspiration is often sufficient.

The articles on metabolic diseases which form the second section are as a rule complete. An exception is found in the discussion on diabetes, for recent advances in the methods of treatment, particularly those dealing with the calculation of suitable diets, are not mentioned. Dietetic treatment is mentioned in a general way, but no details are given. Lists of suitable and unsuitable articles of diet are supplied. When dealing with the use of "Insulin" the author does not describe a method of arriving at a suitable initial dose, but simply advises beginning with five units and increasing till the urine is sugar free.

In the section on diseases of the circulatory system the articles are good, but auricular fibrillation is not dealt with as fully as its importance merits. In the treatment of auricular fibrillation, quinidine is recommended in selected cases, but the indications and contra-indications for its use are not stated.

Diseases of the blood and ductless glands are grouped together in the next section and here again the absence of recent views is noted. This is noticed particularly in the case of Graves's disease. Auricular fibrillation is not included in the cardiac complications of this disease. Toxic adenoma is omitted and there is only a brief reference to basal metabolism.

In the section on diseases of the respiratory system some of the recent ideas about asthma are not prominent, but other parts of the section are excellent and some of the best articles in the book are found there.

In the articles on the digestive system fairly full accounts are given of the signs and symptoms of affections of the various parts, but in the differential diagnosis of tumours and other conditions producing similar signs hydatid is not considered, while treatment is as a rule not given in detail. In the treatment of gastric ulcer, for example, olive oil before meals is recommended to diminish the flow of gastric juice, but no alkali is advised and the other drugs mentioned are given for other purposes. Lenhartz's diet is mentioned but not in detail.

Reference has already been made to the inclusion of modern methods of investigation in the section on diseases of the kidneys. The classification of nephritis follows the usual lines and this subject is dealt with fully enough.

A considerable portion of the book is devoted to diseases of the nervous system and all the information that is required in this type of book is supplied.

The last section is concerned with diseases caused by animal parasites and here the most noteworthy condition is hydatid disease. A brief and concise account of the life history of the parasite is followed by descriptions of the clinical manifestations in hydatid of the liver and lung. Hydatid fremitus is given as a sign of hydatid of the lung but the author states that it occurs only in a few cases.

Although the teaching generally is sound, the articles are often too condensed and there are certain features referred to above which detract from its value, and it is unlikely to displace the books now used by students.

There are a few misprints and in one article two lines are transposed. Most of the diagrams are well produced but two in the section on diseases of the respiratory system are not clear.

[1] "Manual of Medicine," by Thomas Kirkpatrick Monro, M.A., M.D.; Fifth Edition; 1925. London: Baillière, Tindall & Cox. Demy 8vo., pp. xviii. + 1,033, with illustrations. Price: 25s. net.

The Medical Journal of Australia

SATURDAY, MAY 2, 1925.

Medical Benefit.

THE message delivered to the Royal Commission on National Health Insurance by the medical profession may be summarized in the following terms. No existing form of national health insurance would be acceptable. On the other hand the medical profession advocated the establishment of a Commonwealth health insurance department to be under the control of a permanent commission on which the medical profession should have adequate representation. The insured should include all persons whose incomes are below a prescribed amount. They should be entitled to all forms of medical attendance, including specialists' services, which should be rendered by all medical practitioners who desire this class of work for fees fixed in accordance with a scale and discharged out of the moneys collected from the insured and the employers and from sums voted for the purpose by Parliament.

The commissioners have recommended:

(i.) That a national health scheme be instituted which will provide adequate medical treatment for the people and which will provide the requisite machinery for the prevention of sickness and accident;

(ii.) That such scheme be dissociated from the administration of the national insurance fund;

(iii.) That the functions and objects of the health department be extended in such manner as will enable provision to be made as early as possible for the effective supervision of adequate medical services, especially in respect to maternity treatment.

The commissioners state that medical benefit is essentially a matter for the health department. It will be remembered that the commissioners are politicians and neither sociologists nor authorities on those difficult problems connected with the relations of the public and the medical profession. In order to arrive at a wise and acceptable decision in regard to the system that the commissioners may put forward in their subsequent reports, it is necessary to examine the fundamental principles on which they are building. A consideration of details, consequential and otherwise, would be useless before this has been done. It appears that the commissioners contemplate a medical service subjected to the department of health. The functions of that service are to be both curative and preventive. If they endeavour to construct a scheme on this basis, they will encounter difficulties of a very real nature. The Department of Health of the Commonwealth has under the present constitutional limitations a restricted activity in the several States. "The effective supervision of adequate medical services" by an extended department of health could not be carried out unless the States agreed to an alteration of the constitution. The Federal Committee of the British Medical Association in Australia has on more than one occasion suggested by implication that it would be advantageous if the administration of the public health laws were transferred to the Commonwealth Government. It may therefore be assumed that as far as preventive medicine is concerned the medical profession would offer no serious objection to such a supervision. In the Hone-Newland report to which the Federal Committee and the medical profession have given their approval, a partial control by the Commonwealth Department of Health is provided. It would be safe to go one step further and to state that the Commonwealth Health Department is the only organization that could coordinate the medical profession and the several local health authorities with a prospect of attaining uniformity of measures of preventive medicine. The commissioners desire to divorce the medical service from the national health insurance fund. The Royal Commission on Health will, no doubt, deal with the whole of this subject and may make some practical proposals in connexion with the manner in which the practising part of the medical profession could be required to carry out duties in hygiene and preventive medicine under the control and at the request of the health authority. It would therefore seem that a medical service established for the purpose of attacking disease and of lessening its incidence and that of accident would be more effective, if kept distinct from any insurance scheme.

The management of such a service would be better in the hands of the health authority than in those of an insurance commission.

The commissioners do not limit the functions of the medical service to preventive medicine. They visualize a medical service working hand in hand with the insurance scheme, giving medical treatment to insured persons and including institutional treatment. Here we have a proposition of a very different character to that of coordinating the general practitioner and the health authority. The extension of the health department for the purpose of supervising medical practitioners in treating insured persons for illness or accident, is contemplated. The medical profession would have but one reply to this proposal. The treatment of disease and injury is the province of the medical profession itself and no departmental supervision would be tolerated. In the plan of the Federal Committee medical benefit would be arranged by the insurance commission, but the control of the service would have to be vested in a body comprising at least a majority of medical practitioners. The medical profession in England has learned a lesson in this connexion. In Australia the mistake of accepting lay control in purely professional matters will not be made.

We have stated above that the medical profssion would agree with the proposal to dissociate the preventive part of the medical service from the administration of the national health insurance fund. It might also agree to a certain measure of supervision or control by the Department of Health of the Commonwealth, provided that disciplinary matters were placed in the hands of a purely professional committee. Medical benefit proper, by which is meant the treatment of all forms of disease and injury, belong properly to the insurance scheme and not to the health authority. The medical profession is prepared to provide this benefit if satisfactory arrangements can be made. It would be futile for the Government to introduce legislation based on the principles cited above, for the result would be a compulsory national insurance scheme limited to the wage and salary earning section of the population and devoid of any form of medical benefit. Such a scheme could not be maintained.

Current Comment.

SCARLET FEVER ANTITOXIN.

THE story of the investigations undertaken by Dr. George F. Dick and Dr. Gladys Henry Dick of the part played by a hæmolytic streptococcus in scarlet fever has been recounted in our issue of November 29, 1924. It will be remembered that these observers discovered evidence of the formation of a definite toxin *in vitro* when streptococci were cultured from the fauces and nares of children suffering from the disease. Horses were immunized with the sterile, filtered broth cultures containing small quantities of sheep's blood. In this way antitoxin was obtained.

Further information concerning the preparation of the antitoxin is now available and in addition the results of the application of a cutaneous test for susceptibility and of immunization of children found to be susceptible, have been published. In the first place Dr. G. F. Dick and Dr. G. H. Dick describe their methods of identifying the scarlet fever streptococcus.[1] It appears that reliable results are not obtainable at present by the application of agglutinin tests. On the other hand the authors have found that scarlet fever streptococci can be distinguished from all other forms by isolating the organism in pure culture, growing them in broth containing 1% of defibrinated sheep's blood, filtering the culture through a Berkefeld *W* filter and ascertaining whether the addition of the serum of a child convalescent from scarlet fever or of antitoxin robs the filtrate of its power to produce a typical cutaneous reaction. These tests need to be controlled by the use of both the test filtrate without antitoxic serum and a standard streptococcic toxin used in skin tests.

The same investigators have treated patients with scarlet fever with antitoxin prepared by injecting increasing doses of toxin or broth culture filtrate into horses.[2] Only severe and moderately severe cases were treated in this way, on account of the difficulty of evaluating the therapeutic action of the antitoxin serum in mild cases. Twenty-nine patients with severe scarlet fever were treated and twenty-one with moderately severe attacks. Fifteen other patients with severe and thirty-five with moderately severe fever served as controls. There were three deaths among the control patients and of the treated patients only one died. This child was suffering from a neglected mastoid infection. Thirty of the children with moderately severe and three with severe disease had post-scarlatinal nephritis. None of those treated with antitoxin were so affected. *Otitis media* was three times as common among the control as among the treated patients. Similarly mastoiditis and severe cervical adenitis were uncommon among the treated and common among the untreated. The antitoxin appeared to lessen the duration of the pyrexia and to render the characteristic symptoms less severe.

[1] *The Journal of the American Medical Association*, March 14, 1925.
[2] *Ibidem.*

In the third place Dr. O. B. Nesbit, the Director of Medical Inspection of the Public Schools, at Gary, reports the results of a relatively extensive application of the Dick test for susceptibility in school children.[1] Of the children at fourteen schools, 2,162 were tested with standard streptococcus toxin. This represents 15% of the school population. Eight hundred and sixty-two children yielded a reaction, that is 40%. In addition two hundred and twenty-four or 10% gave a slight reaction. Dr. Nesbit is of opinion that the children yielding slight reactions are probably immune. The point, however, needs further investigation. Lastly 1,076 children or about 50% failed to react. A systematic immunization was undertaken of the children shown by the skin tests to be susceptible. In the first attempts the initial dose was three hundred skin doses and the third twelve hundred. Later five hundred, one thousand and two thousand skin doses were given successively. It may be advisable to give even larger doses. Three severe reactions were observed. Retests were undertaken after the immunization and 19% were found to be still susceptible. While scarlet fever developed in three children who had reacted to the tests, no child was attacked who did not respond to the cutaneous test. It would thus appear that the toxin test provides reliable information of susceptibility or immunity, that approximately three-quarters of the susceptible children can be immunized with toxin and finally that antitoxin is a specific remedy.

MOSQUITO CONTROL.

THE biological method of combating pests is not altogether a new one. It has several advantages over other methods and when successful may be dramatic in its results. The example most commonly quoted is probably that of the introduction from Australia into California of a small beetle, *Novius cardinalis*, to combat a white scale which threatened to destroy completely the orange and lemon industry in the latter country. This beetle was entirely successful in eradicating the pest and repeated its performance in other countries. This principle has been applied to the prevention of malaria, yellow fever, filariasis and dengue fever in human beings by means of fish introduced into the water harbouring the larvæ of mosquitoes which act as vectors of these diseases. In some places the method has been used in a thorough and scientific way and in others its application has been in a half-hearted manner. Work done along these lines during recent years has been summarized in a publication by the International Health Board of the Rockefeller Foundation. It is pointed out that the biological method is not without its dangers unless it is applied by experts. Thus the *Novius cardinalis* was imported into California to eradicate a scale which had been introduced from other countries. Californian fruitgrowers thought that it would also destroy the scale of local origin. The beetle not only failed in regard to local scale, but actually introduced a new kind of scale which had been put into the shipping boxes as its pabulum for the journey. Objection has been raised to the attempt to control mosquito production by the use of fish on the ground that Nature tends to establish a balance between mosquito larvæ and fish. It was thought that fish and larvæ would eventually live side by side. In spite of this objection there is no doubt that by such means as destroying aquatic vegetation and affording the fish more favourable opportunities this balance can be upset so that the fish may acquire permanent dominance.

Mosquitoes of all species pass through four distinct states; egg, larvæ, pupa and imago or adult insect. The first three are aquatic and, living in a fixed, accessible and easily located habitat, may be destroyed on a large scale. As a matter of fact, it is the larval stage which is commonly attacked. Several qualities are necessary in fish to be used as mosquito destroyers. Mosquitoes breed in pools protected by vegetation; hence fish used must be of a species which will search for food in water of this description. The fish must breed rapidly because large numbers of them must be kept in the water. Carnivorous are to be preferred to omnivorous fish. Surface feeders are generally best, though in the destruction of such mosquitoes as Stegomyia bottom feeders may be preferable. In order to escape destruction by larger fish they should be small and inclined to frequent shallow water. Live fish may be placed with safety in water ultimately intended for drinking purposes for the reason that they have not yet been found to harbour pathogenic germs.

Detailed information is given in this publication in regard to fish control in various countries. The types of fish that have been used for mosquito control and that may be employed in this manner, are described. In regard to Australia reference is made to an article by L. E. Cooling, in which it is stated that the crimson spotted sun fish, the green perchlet and the firetail, three native Australian fish, are effective enemies of mosquito larvæ and that all do well in confinement. Several native fish which devour larvæ in aquaria, are of little value in streams and ponds. Two Australian fish withstand semi-polluted waters and for this reason are useless against *Culex quinquefasciatus* which is the vector of filariasis in Queensland. This mosquito breeds preferably on sewage-polluted water, which is too foul for habitation of native fish. Native fish therefore may be used and should be used in the Commonwealth for the destruction of mosquitoes of the Anopheles variety and other "bush" mosquitoes. Emphasis is laid on the fact that no fish exists in Australia for the destruction of its most dangerous disease-carrying mosquito. The suggestion is made that the introduction of *Gambusia affinis* might aid in reducing the morbidity from filariasis. *Gambusia affinis* is a top-minnow. A medium sized female has been known to destroy one hundred and sixty-five large mosquito larvæ in a day.

[1] *The Journal of the American Medical Association*, March 14, 1925.

Abstracts from Current Medical Literature.

SURGERY.

Acute Abdominal Conditions.

JOHN B. DEAVER (*Surgery, Gynecology and Obstetrics*, December, 1924) writes on the subject of acute abdominal conditions which comprise perhaps the most important questions in surgery and medicine. Acute lesions of the abdomen call for careful judgement and thoughtful consideration. More often than not the patients present a history of an antecedent lesion, such as chronic appendicitis, peptic ulcer, cholecystitis, pancreatitis or hernia. The more common causes of acute abdominal conditions should be recognized without difficulty provided a careful study of the history and a well conducted physical examination are made. Deaver points out that the presence of an abdominal scar in a patient suddenly seized with acute abdominal pain should at once arouse suspicion of serious trouble and intestinal obstruction should be in the mind of the doctor. Very often he fails to think of this and, waiting for the classical signs, leaves it too late for a curative operation. An acute lesion of the abdomen in the absence of an abdominal scar should first, last and always suggest a pathological condition of the appendix. The possibility of pneumonia or diaphragmatic pleurisy is always worth remembering. He lists in order of frequency the lesions of the acute abdominal conditions as follows: Appendicitis, cholecystitis, perforated duodenal or gastric ulcer, acute salpingitis, acute intestinal obstruction, ruptured extrauterine pregnancy, acute pancreatitis, acute hæmatogenous infection of the kidney, twisting of the pedicle of an ovarian cyst, acute diverticulitis mesenteric thrombosis and so forth. He discusses how the many and varied positions of the appendix lead to confusion in diagnosis. Deaver thinks that cautious delay in doubtful conditions is justifiable and that it is unwise for a surgeon to open the abdomen of a very sick patient, when he has practically no idea what is wrong. He draws attention to untimely and unsuitable operations. As an example of the former he quotes operation on the appendix in the presence of diffuse peritonitis, a "silent belly" and no palpatory evidence of a point of localization. This was wonderfully expressed by the late Maurice Richardson as "too early for a late operation and too late for an early operation." As an example of an unsuitable operation he refers to the operation for acute appendicitis with circumscribed peritonitis and abscess formation, in which the opening is made into the free peritoneal cavity. The high mortality from acute abdominal conditions is partly due to the lack of intimate knowledge of living surgical pathology, partly to too great reliance on laboratory findings and finally to hesitancy in adopting radical measures. Radical treatment under these conditions is truly conservative, since it saves life. In appendicitis the result of the blood count should not influence the decision against operation. In deciding when to operate the surgeon should rely not upon the blood count but upon the physical examination and the condition of the patient. The late John B. Murphy said that for every death from appendicitis somebody was to blame. It is almost criminal to wait for another attack before subjecting the patient to operation. Acute abdominal pain and the presence of a mass in the lower part of the abdomen on the left side should suggest the diagnosis of diverticulitis and the patient is more likely to complain of constipation. Chronic peptic ulcer is the surgeon's province and the frequent occurrence of acute rupture should keep any right minded doctor from advising medical treatment for chronic non-perforating peptic ulcer. If acute pancreatitis cannot be ruled out of the differential diagnosis, operation should be immediately done, when if this condition be found, the surgeon should deal with the pancreatic lesion only and not attempt to investigate the biliary passages. Traumatic lesions of the abdomen are found in two forms. In one form the wound penetrates the wall and operation should be done to explore for peritoneal involvement. In the second form no injury is manifest but in cases of doubt the abdomen should be opened.

Gastric Surgery.

H. B. DEVINE (*Surgery, Gynecology and Obsterics*, January, 1925) discusses physiological and pathological problems of the stomach and the basic principles and supreme difficulties in gastric surgery. It is conceived that the sympathetic imposes a retention postural tone on the gastric muscle and this affords an explanation of many clinical phenomena. Alterations in gastric posture which are governed by the sympathetic, derange the natural, alkaline, duodenal, protective regurgitation which controls acidity, and probably initiate a set of circumstances which may eventually result in ulcer. In those ulcers with hyperacidity, an alkalizing operation is essential. Gastro-enterostomy is most uncertain in its regurgitant alkalizing effect. The good effects of gastrectomy in duodenal ulcer are due to the exclusion of the ulcer and to a better alkaline regurgitation than to any hyposecretion. Unless an old ulcer is resected in association with gastro-enterostomy, recurrence even with a low acidity from the residual infection of the ulcer is probable. The same effect can be obtained by eliminating the sympathetic retentive area of the stomach. This applies in those old ulcers if unassociated with obstruction. The gastric ulcer type of stomach lends itself with success to extensive resection of ulcer with gastro-enterostomy or to partial gastrectomy.

Operation Technique.

F. DEMMER (*Wiener Medizinische Wochenschrift*, November 15, 1924) gives a detailed account of the methods employed in the preparation of the patient and the disinfection of the gloves and instruments at a large hospital in Vienna in which strict economy is necessary. Sharp instruments are placed in 90% alcohol for fifteen minutes and dried before use with a sterile compress. Other instruments and silk ligatures are boiled for fifteen minutes. Rubber gloves after being washed with soap are soaked in a one in one thousand solution of corrosive sublimate for fifteen minutes, dried and sprinkled with sterile powder and stored in bags. The skin is not washed but dry-shaved and 5% tincture of iodine is applied five minutes and again one minute before operation. The surgeon's hands are washed in warm soapy water for one minute, no brush being used. They are then dried and scrubbed with 1% corrosive sublimate solution in alcohol. After drying the hands and powdering them the surgeon puts on the gloves. They are then further washed in soapy water and in one in one thousand corrosive sublimate solution for two minutes. Sterile cotton gloves are usually worn over them.

Gastric and Duodenal Ulcer.

W. F. CHENEY (*California and Western Medicine*, December, 1924) discusses the diagnosis and treatment of gastric and duodenal ulcer. The means at the disposal of the medical practitioner for the purposes of diagnosis are the history, physical examination, laboratory tests and X-ray examination. Neither the history nor the physical examination offer unequivocal diagnostic information. In regard to laboratory tests of the stomach contents the author points out that the fasting contents usually present characteristic features; the amount is increased above fifty cubic centimetres and the total acidity and free hydrochloric acid are frequently high, blood may occasionally be present. All the expected findings, however, may be absent and the fasting contents may be normal. Similarly in the examination of the stools the absence of blood does not disprove a diagnosis of gastric ulcer and its presence is of value only when considered in conjunction with all the other symptoms and signs. The chief value of examinations of the stools is to exclude the presence of parasitic ova and cysts. Blood examination may reveal a secondary anæmia, but no more. The Wassermann test should never be omitted, no matter what symptoms are present. The X-ray examination is of the utmost importance and no conclusion is justifiable without the evidence which it supplies. The author lays stress on the fact that while the recognition of ulcer rests largely on

the X-ray findings, it must not rest on these alone. Treatment in his opinion is not necessarily surgical in all instances, but surgery is demanded in certain circumstances. Thus perforation and hæmorrhage call at once for intervention and persistent pyloric obstruction is a mechanical defect which requires surgical treatment. Ulcer of the lesser curvature of any considerable size will not heal by medical means and requires surgical intervention. Operation is also necessary when there is any suspicion of the presence of malignant disease. When prolonged medical treatment has made no improvement, surgical measures should be used. Relapse may occur after both surgical and medical treatment. As infection has been considered a cause of peptic ulcer, all septic foci in the region of the mouth and naso-pharynx should be removed.

Acute Pulmonary Abscess and Chronic Pulmonary Suppuration.

CARL A. HEADBLOM (*The Journal of the American Medical Association*, November 15, 1924) discusses the surgical treatment of acute pulmonary abscess and chronic suppuration. He refers especially to the type of suppuration following tonsillectomy. Of six hundred and ninety-two patients at the Mayo Clinic suffering from pulmonary sepsis 21% had been submitted to surgical operation. In 31% of these the condition followed tonsillectomy, in 9.5% it occurred after the extraction of teeth and in 26% it had been preceded by laparotomy. Abscess following tonsillectomy is as a rule localized, but may be widely distributed from the onset. In some instances the infection is undoubtedly of embolic origin; it is accompanied by severe symptoms and usually results in death. Rational treatment must be based on the pathological condition present. Thus expectant treatment is indicated in the early associated pneumonitis, the end of the incipient stage being generally marked by the sudden appearance of large amounts of purulent sputum. Surgical treatment should be instituted in the presence of localized uncomplicated abscesses that manifest no signs of improvement. Surgical treatment varies and may comprise the formation of a pneumothorax, extrapleural thoracoplasty, thoracotomy or lobectomy. The author discusses these operative procedures and enumerates the indications for the performance of each of them.

Carcinoma of the Thyreoid Gland.

B. BREITNER (*Wiener Medizinische Wochenschrift*, January 3, 1925) states that one hundred and three cases of malignant disease of the thyreoid gland were observed at Eiselsberg's clinic from 1901 to 1922. The majority occurred in patients with pre-existing goitre. The average duration of life was about one year. Twenty-three patients were not operated upon, whilst seventy-two had eightyeight operations performed. Of these twenty-three died within three weeks and twenty-six before the end of the first year. Seven were alive beyond this period and thirty-nine could not be traced. Operation combined with X-ray treatment was used in fourteen cases. Three patients died within one year and the others are alive after periods varying from one to twelve years. The author concludes that a sudden unexplained increase in size of a normal or enlarged thyreoid should be regarded with suspicion. Hæmorrhagic or suppurative conditions can usually be differentiated with ease. Early diagnosis and operation are essential for good results. The combination of operation and radiotherapy promises to be the most successful line of attack.

Gastric Carcinoma.

A. EISELSBERG (*Wiener Medizinische Wochenschrift*, January 3, 1925) groups the cases of gastric carcinoma seen in his clinic from 1915 to 1924 according to the treatment adopted. Exploratory incision was done in one hundred and four cases with eleven deaths. Of the patients who survived, forty-nine died within six months. Jejunostomy was performed on twenty-two patients with eleven deaths. The longest any of the patients lived was four months. One hundred and four patients had gastro-enterostomy performed with eleven post-operative deaths from peritonitis or pneumonia. In the majority the operation gave six months comparative good health. Resection was performed in one hundred and fifty-seven instances. In twenty-nine Billroth I. operation was performed and in one hundred and in twenty-eight Billroth II. The mortality of 20% was due mainly to peritonitis and pulmonary complications. In several of the cases resection of the transverse colon and cholecystectomy were performed in addition. Sixty-two patients lived about one year and 27% were apparently cured after periods varying from two and a half to nine and a half years.

Arthroplasty.

W. RUSSELL MACCAUSLAND (*Boston Medical and Surgical Journal*, October 16, 1924) discusses the indications for arthroplasty and the technique of this operation in the treatment of ankylosis. Ankylosis may be bony or fibrous, in the latter movement may extend through ten or fifteen degrees. Most joints ankylosed in a good position are entirely satisfactory, but if they are causing any symptoms or if the position is bad, operation is indicated. Ankylosis may be caused either by traumatism or disease, the gonococcus, pneumococcus and the streptococcus being most frequently found. Until recently it was the endeavour of the surgeon to obtain ankylosis of such joints in a good position. Now the surgeon seeks, if possible, to obtain a movable joint. The joints most suitable for operation are the elbow, hip, knee, temporomaxillary and the joints of the wrist and fingers. No attempt should be made to mobilize the joint until epiphyseal growth has ceased. Tuberculous infection of joints, except in very rare instances, is a direct contra-indication for arthroplasty. Fundamental indications for arthroplasty are as follows: Two stiff hips, two stiff knees or two stiff elbows. In these circumstances one joint or both may be mobilized. A combined ankylosis of the hip and knee in the same individual is a very definite indication for attempting to mobilize one or both joints. Stiff wrists very rarely call for interference. The general operative technique consists in exposing the joint surfaces, modelling the bone end in accordance with the mechanical needs and the intro-position of some substance to prevent bony union. Free fascial transplants have yielded excellent results in the author's hands. To insure good function the joint surfaces should fit accurately before the fascia is applied. If too much bone is removed, a flail joint will result. The fascia is freed from all fat and is attached to the old capsule and to the periosteum after being placed between the ends of the bones. The limb is then put in plaster and when normal healing occurs, is allowed to remain in plaster for ten days. After this passive movement is started. After three weeks gentle massage is instituted and after six weeks hot air baking is given. Frequent skiagrams should be taken in order to reveal any new bony out-growths. When these are found a secondary operation is required to remove the excess bone. The range of movement of the new joint should be from 75% to 90% of that enjoyed by the normal joint. The capsule should be strong and should be devoid of tenderness or strain. The resulting joint space is a sac which is sometimes multi-locular and which apparently contains normal joint fluid.

Acute Localized Infection of the Kidney.

ARTHUR E. HERTZLER (*Surgery, Gynecology and Obstetrics*, February, 1925) deals with the question of the origin of acute localized infection of the kidney. The lesions in hæmatogenous infections of the kidney are in most instances not abscesses, but infarcts. The bacteria in these cases are of too feeble a virulence to cause abscesses. In such circumstances, the constitutional reaction is due to protein poisoning and not to infection. Various types of pyelitis are secondary to kidney infections of hæmatogenous origin and the chief factor in their treatment is the eradication of the source of infection. Ascending infection of the kidney has not been proved. The localization of the lesions indicates that bacteria in the urinary tract gain entrance to the blood stream and pass by this avenue to the kidney. The difference in character of the lesions is due to the difference in the offending organisms.

British Medical Association News.

ANNUAL MEETING.

The Annual Meeting of the Western Australian Branch of the British Medical Association was held at the Claremont Hospital for the Insane on March 22, 1925, Dr. Dixie P. Clement, the President, in the chair.

Annual Report.

In accordance with the custom of the Western Australian Branch the retiring President, Dr. D. P. Clement, read the annual report instead of delivering an address. The report is in the following terms.

Annual Report of the Council.

Meetings.

The Council held six meetings with an average attendance of six members.

There were nine general meetings of the Branch held with an average attendance of twenty-eight. The Ethical Committee held one meeting.

Papers.

Instructive papers were read during the year. Many cases and specimens were shown. The papers were read by Dr. E. J. T. Thompson, Dr. T. Thomas, Dr. D. M. McWhae, Dr. D. D. Paton, Dr. H. J. Gray, Dr. J. K. Couch, Dr. K. G. McK. Aberdeen, Dr. C. Joyce and Dr. D. P. Clement, whilst much appreciated clinical meetings at the Children's Hospital as kindly arranged by Dr. J. Gordon Hislop and at the Perth Hospital by Dr. D. S. Mackenzie, were held.

Annual Dinner.

A successful annual dinner was held at the Palace Hotel in December when over thirty-five members were present. His Excellency the Governor and Dr. A. Carless, C.B.E., were the guests of honour.

Membership.

The membership of the Branch has increased from one hundred and sixty-five last year to one hundred and eighty this year. The number of medical practitioners in practice at present in Western Australia is two hundred and thirty-one, so that practically 78% of the medical practitioners are members of the Branch.

It is with much regret that the Council has to report the death during the year of Dr. John Walker, of Kalgoorlie, who has been a practitioner of high standing at Kalgoorlie for many years, and also the death of Dr. William Pope Seed, who has been an active member of the Branch for many years. He joined the Branch in 1900 and was a member of the Council in 1905. He was President of the Branch for the year 1908 and a member of the Ethical Committee in 1922 and for the last six years has been the Western Australian representative in the Federal Committee.

Honorary Treasurer.

Dr. W. Trethowan resigned his position of Honorary Treasurer at the end of the year just closed and it was with great regret that the Council accepted the resignation. Dr. Trethowan took over the treasurership in March, 1914, and with the exception of the period when he was on active service in 1916, he has occupied the position up to the end of the last financial year. When Dr. Trethowan took over the Branch, it had a credit balance of £39 13s. 8d. and to-day it shows an excellent result of £1,357 2s. 6d.. The Council desires to place on record its appreciation of Dr. Trethowan's excellent services.

Uniform Incorporation of the Branches.

The uniform incorporation of the Branches has received much consideration by the sub-committee and the Council. No finality has yet been reached, as it is found that some of the Branches in Australia are not prepared at present to alter their rules and regulations. Consideration has been deferred pending the result of the investigations by the Federal Committee.

National Insurance.

The report of the Royal Commission on National Health Insurance has not yet been published. The general opinion of the members appears to favour national insurance, provided that there are wage limit safeguards. The friendly societies are not altogether in accordance with national insurance as it may interfere with their vested interests. The Council is of opinion that the scheme will not eventuate, as it will involve too large an outlay for the Federal Government. When the opinions of the members of this Branch were sought last year only thirty-six replies were received, fifteen against and twenty-one in favour.

Representative on the Council of the Association.

The Council of the Branch has recommended Dr. T. P. Dunhill, who also represents the Victorian Branch, as the member representing the Branch on the Council of the British Medical Association.

Australasian Medical Congress (British Medical Association), Second Session.

Already the organization of the second session of the Australasian Medical Congress (British Medical Association), Dunedin, 1927, has started work and has communicated with the Council for recommendation for Vice-Presidents of Sections. The Council has recommended Dr. Syme Johnson as local Honorary Secretary.

Federal Committee of the British Medical Association in Australia.

During the year Dr. W. P. Seed resigned his position as one of the Western Australian representatives on the Federal Committee of the British Medical Association in Australia on account of ill health and Dr. D. D. Paton was appointed in his place. The Council decided to invite the two representatives of the Western Australian Branch on the Federal Committee to attend all Council meetings with a view of keeping in touch with all Federal matters. The invitation was accepted and the Council felt sure that the result of such conference will be beneficial to the Branch.

Honorary Secretary.

Dr. T. L. Anderson resigned the position of Honorary Secretary during the year after four years' work. The Council appointed Dr. R. H. Crisp in his place. The thanks of the Council and of the Branch are due to Dr. Anderson for his excellent work.

Model Lodge Agreement.

Much discussion and consideration of the subject of the model lodge agreement have taken place by the Council, the sub-committee and the general meeting of members during the year. The Friendly Societies' Council suggested modifications in their favour of practically every clause of importance in the model lodge agreement; the Branch, however, has declined to grant these modifications. It is thought that this matter will again come up for discussion. The Council urges all members who hold lodge practices, to see that they have an agreement and that it is duly signed by the representative of the Branch. The friendly societies have evaded their duty by including on the doctors' lists persons who are not financially entitled to medical treatment. This is a distinct duty of the lodge secretaries under clause VII. of the model lodge agreement. All members are urged to examine the lists carefully supplied by the friendly societies and also to obtain from the lodge secretary a certificate of the eligibility as regard income of the persons' names in the lists. If all members will insist upon this and report to the Honorary Secretary when they do not get such certificates, it will greatly strengthen the hand of the Council and the sub-committee.

The New Home of the British Medical Association.

The opening of the new house of the British Medical Association in Tavistock Square, London, in July, 1925, will be an important event in the history of the Association. As Dr. C. Morlet is going to London, the Council has asked him to represent the Branch at the opening ceremony.

Medical Benefits to Widows and Orphans of Deceased Soldiers.

During the year an agreement has been arrived at for medical benefit to be given to the widows and orphans of soldiers whose death is due to war service and to widowed mothers of such deceased unmarried soldiers under the model lodge agreement.

Friendly Societies' Voluntary Hospital Fund.

A scheme known as the Friendly Societies' Voluntary Hospital Fund has been started with a view of paying hospital fees, but great care must be taken that patients able to pay fees outside the hospitals are not admitted. By payment of seven shillings and sixpence *per annum* free treatment will be guaranteed in the hospital. The number of patients treated in the hospitals is continuously on the increase and to obtain funds to run the hospitals there is a tendency to take in paying patients whom the medical practitioners are supposed to treat free of charge.

It is time that the profession takes a stand and demands that while the medical profession on the one hand gives its services to hospitals free of charge, the hospitals on the other hand should likewise treat the patients free of charge. This should create a demand for intermediate hospitals where the medical man would at any rate be partially paid for his services. There are plenty of capable nurses prepared to run intermediate and private hospitals, but they are unable to do so, while the public hospitals accept these patients and give free medical treatment at the expense of the profession. Furthermore, in view of the fact that their services are given free, the members of the medical profession should have fair representation on the board of management of each public hospital.

ELECTION OF OFFICE-BEARERS.

The President announced that one hundred and seventy-one nomination papers had been issued; seven had been returned. A few of the nominations had not been seconded; some of those nominated had declined to serve. The result of the elections was as follows:

President: Dr. J. E. F. Stewart.
Vice-President: Dr. T. L. Anderson.
Ex-President: Dr. D. P. Clement.
Honorary Treasurer: Dr. D. D. Paton.
Honorary Secretary: Dr. R. H. Crisp.
Members of the Council: Dr. R. C. E. Atkinson, Dr. E. C. East, Dr. R. S. McGregor.
Members of the Ethical Committee: Dr. H. G. Barker, Dr. H. B. Gill, Dr. W. H. Nelson.

INDUCTION OF PRESIDENT.

Dr. D. P. Clement thanked the members for the support they had given him during his year of office as President. He also thanked the members of the Council for the loyal manner in which they had helped him to carry out his duties.

He then vacated the chair in favour of Dr. J. E. F. Stewart.

CLINICAL REPORTS.

Dr. J. Bentley and Dr. E. J. T. Thompson presented some patients and read clinical notes. These records will be published in a subsequent issue.

REFERENCE LIBRARY.

Dr. F. Clark drew attention to the credit balance of the Branch mentioned in the financial statement of the Honorary Treasurer. He wished to call attention to the absence of a reference library. Many practitioners were prevented from preparing papers by this lack of facilities to consult medical literature. After discussion it was decided to leave it to the Council to report on the proposal to institute a reference library.

NOTICE OF MOTION.

Dr. J. Gordon Hislop gave notice of his intention to move at the next meeting of the Branch:

> That in view of the possible establishment of an ante-natal clinic and an infant health clinic at the King Edward Memorial Hospital this meeting discuss the advisability of approaching those in charge of the management of that hospital with a view to the appointment of a resident medical officer.

SCIENTIFIC.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Rooms, Adelaide Street, Brisbane on March 6, 1925, DR. V. MCDOWALL, the President, in the chair.

Sterility.

DR. A. C. F. HALFORD demonstrated the apparatus which he had constructed for testing the patency of the Fallopian tubes in cases of sterility. The apparatus consisted of a glass nozzle for insertion into the cervix connected with rubber tubing to a mercurial manometer. From experiments he had found that a pressure of fifty millimetres was the maximum to be used in each case.

Foreign Bodies in the Eye.

DR. J. LOCKHART GIBSON gave a demonstration of the effect of the electro-magnet in the removal of steel fragments from the eye and of the attitude taken by the fragment when coming towards the magnet. He also read notes on several cases of foreign body in the eye.

The Duodenal Tube.

DR. CYRIL SHELLSHEAR read a paper entitled "Observations from the Use of the Duodenal Tube."

Post-Graduate Work.

DR. E. S. MEYERS moved and Dr. A. H. Marks, O.B.E., D.S.O., seconded the following motion which was carried unanimously:

> That this Branch arrange for a post-graduate course to be held in Brisbane during the winter months, and that the Council be requested to make the necessary arrangements.

Medical Politics.

NATIONAL HEALTH INSURANCE.

ON sundry dates between September 7, 1923, and August 8, 1924, His Excellency the Governor-General appointed Senators B. Benny, J. D. Millen and A. McDougall and Messrs. J. Francis, J.P., A. E. Green, J. P., R. F. H. Green, J.P., and W. G. Mahony, J.P., commissioners to inquire into and report upon (i.) national insurance as a means of making provision for casual sickness, permanent invalidity, old age and unemployment, (ii.) the operation of the maternity allowance system with a view to the incorporation with national insurance of a scheme for securing effective pre-natal and other assistance to mothers and (iii.) the question of amending the *Invalid and Old-Age Pensions Act*, 1908-1923, so as to provide for the payment of destitute allowances. On the death of Senator McDougall, Senator J. Grant was appointed in his stead.

The commissioners have issued a progress report. In the introduction they define the scope of their inquiry

and indicate the arrangements they have made for the collection of information. They have considered the objects, operations, methods of administration and experience of many organizations concerned with the matters under their consideration. They have examined many witnesses in all the States of Australia. Of one hundred and fifty-three witnesses thirty-four were medical practitioners and nine were actuaries.

In view of the great importance of this subject to the medical profession the remainder of the report is given in full, notwithstanding the large amount of space occupied. The only alterations of the presentations made are those dictated by the typographical rules adopted by this journal; the grammatical and literary licences of the authors of the report have not been disturbed.

Need for National Insurance in Australia.

The estimated number of wage and salary earners in Australia, males between the ages of sixteen and sixty-five years and females between the ages of sixteen and sixty years, as at June 30, 1924, was as follows:

Age Groups.	Males.	Females.	Total.
16-19	172,000	100,000	272,000
20-24	192,000	102,000	294,000
25-29	179,000	58,000	237,000
30-34	172,000	35,000	207,000
35-39	142,000	24,000	166,000
40-44	117,000	18,000	135,000
45-49	96,000	14,000	110,000
50-54	87,000	11,000	98,000
55-59	71,000	8,000	79,000
60-64	50,000	—	50,000
Total ..	1,278,000	370,000	1,648,000

The estimated average adult wage for a full week's work as at June 30, 1924, was £4 14s. 3d. for males and £2 10s. for females.

The wage-earner is generally unable to provide unaided for the circumstances arising from his incapacity to work. His economic position is also seriously affected by the sickness of his wife or dependants. Very often under present conditions these unfortunate circumstances necessitate an immediate request for charitable assistance. Efforts similar to those in most countries have been made by the people in Australia towards mutual assistance during periods when, as the result of sickness, accident or old age their earning capacity is reduced and when in addition the exceptional requirements of the occasion have to be met. Some wage-earners have voluntarily made efforts to provide for themselves through the formation of friendly societies, trade union benefit funds, establishment funds and other mutual associations; many employers of labour have assisted in the establishment of benefit funds for their employees; workers' compensation legislation has enforced provision for compensation for industrial accidents and diseases; State Governments provide funds for charitable relief and institutions for free treatment of the indigent sick and for the care of the aged and the infirm; numerous private, religious and local government organizations provide nursing and other charitable assistance, whilst the Commonwealth Government has made provision for the payment of old-age and invalid pensions and the maternity allowance. Some provision is, therefore, being made in Australia at the present time for the wage-earner during such periods of incapacity to work, but only in a moderate and generally inadequate manner by organizations which in many cases have the inherent defects of all similar voluntary schemes. It is obvious from the efforts of these organizations that the main principle of national insurance, *id est* the provision of assistance to the wage-earner when incapacitated for work is generally acknowledged throughout Australia. These existing organizations represent a stage in the evolution of national insurance and furnish conclusive evidence of the necessity for the institution of a national scheme in Australia.

Existing systems of mutual and other assistance in Australia have failed to adequately assist the majority of wage-earners to make provision for the difficult circumstances in which they may be placed as the result of sickness, accident, permanent invalidity and old age. It is estimated that only approximately 524,000 out of a total of 1,648,000 wage and salary earners have made voluntary efforts to provide for themselves through mutual associations. The majority, although they have a constant anxiety as to the possibilities of such unfortunate circumstances, have failed owing either to financial inability, lack of thrift and foresight or to a number of other causes to make provision voluntarily against the risks of sickness and accident. Most schemes in operation in Australia have certain restrictions placed upon them which debar many wage-earners from availing themselves of the benefits offered and thus often fail to provide assistance for those who most need it. Nevertheless, many of the numerous existing schemes are worthy of encouragement as they are carrying out very desirable objects and have undoubtedly in many instances been of great assistance and benefit. Some are mainly charitable organizations and it is not desirable that the philanthropic motives of the people should be discouraged, but on the other hand the recipient of charity in many instances loses his self-respect and spirit of independence. As the result of the multiplicity of these organizations throughout the Commonwealth and the diversity of the purposes for which they have been created, there is considerable overlapping, duplication, unnecessary competition, waste of effort and a very apparent lack of coordination and uniformity, together with numerous resultant anomalies arising from unscientific methods. The majority operate mainly in the more heavily populated areas and lack suitable machinery for the less populated areas, where often assistance is as urgently required. A systematic method of relieving the economic burden resulting from the wage-earner's incapacity to work will considerably reduce the number of cases of destitution and the only equitable method of distributing the burden is by insurance.

Your commissioners are, therefore, of the opinion that it is both desirable and necessary that the Commonwealth Government institute a compulsory system of national insurance in Australia which will provide for the payment of sickness, invalidity, maternity and superannuation benefits to insured members. It is considered that only by governmental control and supervision can equitable arrangements be made whereby definite and adequate benefits will be guaranteed to all insured members, with that necessary economy in cost of administration, uniformity of method, effective coordination and unbiased control of the various sections of one comprehensive scheme. A compulsory basis is recommended provided the system is supervised by the Government, as compulsory provisions can be effectively controlled by a national organization only and there are no valid reasons why the Government should transfer its functions and responsibilities to private institutions. Where voluntary schemes have been established in other countries they have generally failed to satisfactorily achieve their purpose, as is indicated by the universal tendency to change from voluntary to compulsory principles. There are no grounds for the assumption that if a voluntary scheme were instituted in Australia it would not have the inherent defects of all such schemes which, as has been conclusively proved, fail to provide for those who most need assistance, cannot be effectively and generally applied and only attract the more thrifty. Nevertheless the continuance of existing voluntary mutual associations should be encouraged as supplementaries to the national scheme.

On reviewing such reports and data as are available relating to the operations of national schemes of insurance in other countries, it was found that provision for incapacity is generally made by the payment of a cash benefit during incapacity, by arrangements for medical treatment during sickness and by the organization of preventive measures against sickness and accident. Your

commissioners are of the opinion that casual sickness, permanent invalidity, old age and maternity should be similarly provided for in Australia as follows:

1. Under a national insurance fund in which provision is made for definite financial assistance to insured members which will relieve the economic stress occasioned by the above-mentioned circumstances. The greatest and constant anxiety of the worker is the possibility of the serious financial difficulties in which he and his dependants will be placed as the result of these contingencies. The average wage-earner is unable during his working life to provide unaided for all circumstances throughout life and only by a governmental system of insurance can the wage-earner be assisted to make adequate financial provision which will give him that essential feeling of security and which will have beneficial results in encouraging thrift and mutual assistance, mitigating poverty, allaying social unrest and furthering national efficiency. For this reason it is considered that a national insurance fund providing for the payment of definite cash benefits to all insured members should be instituted.
2. Under a national health scheme which will aim at adequate medical treatment for the people and which will also provide the requisite machinery for the prevention of sickness and accident. It is generally recognized that the payment of a cash benefit does not alone provide the essential and desirable objects of any scheme from the standpoint of national health; adequate facilities for medical treatment should also be made available and in addition, as much sickness and accident is undoubtedly preventible, efficient preventive measures must be put into operation in the interests of the insured member, of national health and of the insurance scheme itself. Your commissioners, however, after reviewing the reports of the experience of other countries, are of the opinion that it is not desirable that these provisions should be included in any scheme providing for financial benefits, but that they should be dealt with under a definite national health scheme which, although closely related to the objects of the national insurance fund, can be more effectively and satisfactorily dealt with if dissociated from the administration of the financial benefits. Where medical benefits have been administered under a scheme providing for cash benefits also, they have invariably been limited and have proved inadequate, whilst the increasing cost of the former has had a detrimental effect on the provision of the latter.

A considerable amount of valuable evidence has been submitted to your commissioners with respect to the various benefits and facilities, allied to the subject of this inquiry, provided at the present time in some manner in Australia and these data together with our recommendations as to the method under which the several questions could in our opinion be most advantageously dealt with, are submitted hereafter in the following order:

1. National insurance fund—
   - Sickness benefit.
   - Acccident benefit.
   - Invalidity benefit.
   - Maternity benefit.
   - Superannuation benefit.
   - Funeral benefit.
   - Child allowance.
2. National health scheme—
   - Medical benefits.
   - Institutional treatment.
   - Preventive health services.

1. National Insurance Fund.

Sickness Benefit.

Australian Morbidity Experience.

Friendly Societies.—Casual sickness is responsible for a more serious loss in wages and production than industrial accidents and, although legislation has been introduced which compels provision for the latter, that enacted with respect to sickness benefits has merely aimed at the supervision of existing mutual organizations. As friendly societies are established largely for the purpose of medical relief during sickness, each society in Australia provides a benefit for its members when they are certified by a lodge doctor as incapacitated for work as the result of sickness. The records of the sickness experience of such members would be of very considerable value if a comprehensive system of statistical tabulation and analysis were instituted; the records are now kept mainly for financial purposes, but they present a wide and valuable field for investigation as to morbidity according to sex, age, occupation, locality, disease, duration of incapacity *et cetera*. The value of such analysis is especially important when the total membership of friendly societies is taken into consideration. At the end of 1923 the adult membership was as follows: New South Wales,[1] males 182,564, females 15,704, total 198,268; Victoria, males 140,181, females 10,589, total 150,770; Queensland, males 54,663, females 4,986, total 59,649; South Australia, males 61,304, females 11,150, total 72,454; Western Australia, males 17,810, females 1,008, total 18,818; Tasmania, males 22,866, females 1,501, total 24,367; Commonwealth, males 479,388, females 44,938, total 524,326. The total adult membership in 1923 was equivalent to approximately 9% of the total population and to 30% of the total wage-earners in Australia, whereas in 1917 it was equivalent to 9.7% and to 36% respectively.

The average period of sick pay per member in New South Wales during the year 1922 was ten days, having increased from seven days during the last ten years; in Victoria the average per member was twelve days *per annum*, the rate of the leading societies having increased by two days in the last fifteen years; in Queensland the average was eight days, whereas it was formerly six days; the average in South Australia was ten days; in Western Australia and Tasmania nine days, having in Tasmania increased from 5.7 days during the last thirty years. The average period of sickness per friendly society member in Australia during the year 1922 was, therefore, approximately ten days, equivalent to 3% of the total working days in that year. When this average is applied to the total number of wage and salary earners over fifteen years of age in Australia, the result is as follows: 1,284,700 males lost in one year a total of 1,739,000 weeks' work, with a consequent average loss of £5 17s. 10d. in wages by each male wage-earner and a total loss in wages of approximately £7,569,000 in one year. Taking the total number of female wage and salary earners as 383,000, the total time lost as the result of sickness amounted to 399,000 weeks and the average wage lost £2 4s., representing a total loss of £843,000 in wages by female wage-earners. The total loss in wages in one year by male and female wage and salary earners in Australia on account of lost time resulting from sickness was, therefore, £8,412,000. During this period of lost time a number of wage and salary earners would be on sick leave with pay granted by their employers and a total sick pay benefit of £561,000 was paid by friendly societies during the year 1922. Twenty-eight *per centum* of the unemployment recorded at tne 1921 census was due to sickness or accident. This enormous loss in wages and the heavy consequent loss in production estimated at four times the loss in wages as the result of sickness and accident which in many instances is preventible, reveal the necessity that a national scheme should be put into operation which will provide relief and reduce this heavy and increasing annual loss.

Friendly society sickness experience should be better than that for the general population, but although an applicant for membership of a friendly society must be medically examined and certified by the lodge doctor as sound in health and is thus a selected risk when joining the society, his health is not further inquired into during the period of his membership. The statistics of mortality, however, show that the death rate for members of friendly societies is lower than that for the general population and it is anticipated that the rate of sickness amongst the insured population under national insurance will be in the

[1] New South Wales, June 30, 1923.

earlier years at least in excess of that experienced by friendly societies. Before sick benefit is paid the societies generally insist on the production of a certificate from the lodge doctor that the member is unfit for work; further progressive medical certificates being required, usually at fortnightly intervals, until he is fit to return to work. In the event of any doubt arising, an independent medical officer may be asked to examine the sick member. Friendly societies endeavour to keep their sick payments down to a minimum and each branch appoints certain of its members to visit its sick, usually once a fortnight and to report to the branch secretary. Notwithstanding these precautions there has been a very considerable and serious increase in the average period of sick pay per member in recent years. This increase is ascribed by some to the fact that the average age of friendly society members has increased, as sufficient young members are not being admitted to rejuvenate the societies and as sickness increases with age, members are now drawing on the funds towards which they contributed during their earlier years. Others suggest that the heavier payments of sickness benefits are due to the consolidation of funds which has taken place in several of the societies as previously when each branch administered its own funds, many branches were financially unable to pay the full sickness benefit and some even paying as low as only one fourth benefit, but under consolidation every incapacitated member of the society now receives full benefit. It has also been stated that under consolidation the same supervision is not taken in the administration of one central fund as was taken previously in connexion with the branch fund, notwithstanding that the central administration urges branches to exercise care that progressive medical certificates are produced and that sick visitors are efficiently carrying out their duties.

An analysis of the available data relating to the duration of sickness amongst friendly society members shows that 7% of the cases were under one week's duration, 49% were for a period of one and under four weeks, 29% four and under thirteen weeks, 7% thirteen and under twenty-six weeks and 8% over twenty-six weeks. It will thus be seen that only a small percentage of the cases are of such short duration that financial relief is not required, whereas 44% of the cases are incapacitated for a period of over four weeks, which would in all probability necessitate the provision of financial assistance to the wage-earner and his dependants. Approximately 18% of friendly society members receive sick pay in one year and the average duration of sickness per member drawing sick pay is nine weeks *per annum*, which indicates that at least one-sixth of the wage-earners in Australia require financial assistance and medical treatment for a similar period in each year.

Trade Union Benefit Funds.—Very few trade unions in Australia have sickness benefit funds available for their members and it is estimated that of the 700,000 members only about 30,000 are contributing for the sickness benefits provided by the various unions. Trade unions have been organized more for industrial reasons than for the purpose of providing sickness benefits which when available are very limited in their operation, with the exception of those of two large unions. The contributions are not generally based on actuarial calculations, but form portion of the fortnightly contributions to the general union funds and there is little evidence available as to the sickness experience of the members of these funds. Distress funds are administered by the central organizations, but are very limited in extent and so many calls are made upon them through sickness troubles of all kinds that only a few cases can be adequately met.

Government Departments.—An analysis of investigations carried out by the Commonwealth Department of Health into the sickness experience of the employees of the following Government Departments: Victorian Education Department for the years 1914, 1920, 1921, 1922; New South Wales Education Department for the years 1920, 1921; Federal Taxation Department, Central, Victoria and South Australia, 1921; Treasury Note Issue Branch, 1921, and Victorian Government Railways, 1921, employing a total of 75,218 officers, revealed the fact that during the above-mentioned years an average of 31% of male, 38% female and 33% of all employees were granted sick leave of more than two days' duration. The resultant effects on the administration of the departments are detrimental to efficiency, and clearly indicate that adequate preventive measures should be instituted. The average number of days' sickness per officer *per annum* was 7.7 and is lower than that for friendly society members, which is probably due to the fact that officers are retired from Government departments on account of ill-health and when the maximum age of retirement has been reached, whereas friendly societies retain their members throughout life.

Other Organizations.—Benefit funds which have been put into operation by employers for the benefit of their employees are not compelled to register as such. These funds usually provide sickness benefits, but only large firms are able to institute schemes which would adequately meet all requirements, as the cost in small enterprises would be prohibitive. Certain industrial establishments throughout Australia now forward statements of the sickness experience of their employees to the Commonwealth Health Department and in four of these firms the sickness rate ranged from 3.1 to 9.7 days per male employee and from 6.1 to 8.3 days per female employee *per annum*. Most of the larger benefit schemes instituted by employers have been established on a fairly sound basis and in some instances an actuarial examination and report is made every five years. During 1922 a total of 218,209 indoor patients were treated in public hospitals in Australia and, in addition, about 300,000 outpatients also received treatment, the average period of treatment per indoor patient being approximately twenty-one days.

Sickness According to Age.—Friendly societies accept as members only those who are within certain definite age limits; the average earliest age of admission to the adult branch is sixteen years and the maximum age forty-five years, although in some societies members are accepted for partial benefits up to age fifty-five. In the early years of the friendly society movement in Australia the membership kept pace with the growth of population and this was reflected in the average age of members. In recent years, however, the movement is not holding its own, as sufficient young members are not being initiated or at least retained to compensate for the increasing age of all members and to thus keep the average age constant. The annual loss in membership, as the result of secessions from friendly societies is equivalent to 6% of the total membership and to 70% of the total initiations in each year. Many factors have retarded this rejuvenation process and the societies have endeavoured to make amends for the deficiency, but without complete success. This has a serious effect on the outlook of friendly societies, as sickness increases with age and the average age of members of the society bears a definite relationship to the average sickness experience. Some members at the older ages are continuously on the sick fund, and in branches where there are a number of aged members, sick payments are consequently heavy. The experience of some societies indicates that members between the ages of sixteen and twenty-one years are also a heavy burden on the funds. The wage-earner with dependants endeavours to keep at work as long as he can, as the sickness benefit is insufficient to enable him to stop work owing to a slight illness, but it has been stated this does not apply to members under twenty-one years of age who are eligible for the same sickness benefits, but against this statement is the fact that the growing youth is more susceptible to sickness and accident. The experience of the New South Wales Education Department in the years 1920 and 1921 indicated that the healthiest period was in the under twenty-one years of age group, which is probably accounted for by the strict medical examination which each applicant for appointment is required to undergo. The average age of insured members is a very important factor which must be adequately considered in connexion with the institution of a national insurance scheme, but it has been submitted that under a compulsory system the average age will not vary to any appreciable extent from year to year and will thus tend towards that financial stability which a voluntary scheme does not insure.

Sickness According to Sex.—The number of female lodges is small and the female membership of friendly societies in Australia is limited, the total as at December 31, 1923, being 44,938. As the longevity of females is greater than that of males, it follows that in the community there is a relatively large proportion of females of advanced ages subject to the higher sickness rates. Married women have a heavy sickness experience, as is indicated by the demand which they make on the services of the lodge doctor and in some instances a regulation has been brought in which provides that as soon as a female member marries she ceases to be entitled to sick pay. The sickness experience per male member in one large friendly society in New South Wales in 1923 was 11.4 days and per female member 8.6 days; in Victoria it averaged 14.8 days for males and 10.8 days for females; in Queensland in one society in 1922 the average was 8.3 days per male member and 6.6 days per female member; in Tasmania the average duration for males was 9.7 days and for females 8.5 days, which is accounted for by the fact that the greater proportion of female members eligible for benefits are single and of younger age than the males. The average period of sickness of females in Government Departments was 10.9 days *per annum*, as compared with 6.2 days for males; two days and under absences represented 7.7% of the total days lost by male officers and 16.9% of the days lost by female officers; whilst 31% of male and 38% of female officers were granted sick leave of more than two days duration. In certain industrial establishments the experience for females was 6.2 days and for males 7.8 days. The friendly societies' experience of females from the sickness standpoint has not been satisfactory and that of female societies in Victoria has warranted the statement that from ages eighteen to fifty the sickness rate of female societies is about 50% in excess of the sickness rate of male societies. At the inception of national insurance in Great Britain the basis of the provision made for female insured members was the same as for male members, but experience proved that the incidence of sickness amongst women was considerably underestimated with the result that the income of the women's fund was insufficient and the relatively heavy liability of married women has been corrected by an annual grant from public funds. It, therefore, is essential to the financial stability of any national insurance scheme which may be instituted in Australia that the question of contributions in respect of female insured members should be given very careful consideration at the inception of the scheme.

Sickness According to Disease.—The records of sickness experience of friendly society members according to disease have not been tabulated nor analysed and as they present such a valuable field for inquiry, it is desirable that such analysis should be undertaken. The investigation of the sickness experience in various Government departments indicated that the disease groups responsible for sickness in male officers were as follows: epidemic, endemic and infectious diseases 24.2%, external causes (accidents) 21.3%, diseases of the digestive system 15.5%, respiratory diseases 12.3% and nervous diseases 8.8%.. In female officers, epidemic, endemic and infectious diseases 25.2%, digestive diseases 22.7%, nervous diseases 15.9% and respiratory diseases 14.2%. The distribution of days lost according to disease groups was as follows: Male officers, epidemic, endemic and infectious diseases 19.1%, external causes 18.2%, nervous diseases 13.7%, digestive diseases 10.7%, respiratory diseases 9.5% and two days and under absences 7.7%. Female officers, nervous diseases 18.7%, epidemic, endemic and infectious diseases 17%, two days and under absences 16.9%, digestive diseases 14.3%, general diseases 9.8% and respiratory diseases 9.3%. It is obvious from these percentages that a considerable amount of the sickness experienced is preventible and would be avoided if adequate preventive measures were put into operation. No complete analysis has been made of the records of all public hospitals showing the diseases for which patients were treated, although such records also present an exceptionally valuable field for investigation. The particulars with respect to the disabilities of claimants for Commonwealth invalid pensions are not regularly tabulated and analysed and it is most desirable that such statistical compilation should be immediately put in hand. The experience of national schemes in other countries has had an important effect on the application of statistical data to public health purposes, and the comprehensive compilation of such data has considerably increased the knowledge concerning the health of the people. It is very essential that similar statistical investigations should be undertaken in Australia.

Sickness According to Occupation.—A summary of the sickness experience during the years 1918 to 1922 of fourteen dividing societies in Victoria with a total membership of 5,261, which societies do not admit the general public, but have a membership confined to the particular industrial organizations concerned, showed that the average duration of sickness per member *per annum* was 4.3 days, liquor trade employees, rubber workers and explosives workers having heavier experience than the average. In a period of seven years the members of mining branches in one friendly society received £23,000 more in sick pay than they paid in contributions; the average period of sick pay per member *per annum* for the whole society was 11.14 days, but for mining members in one district it was as high as 20.67 days. Friendly societies are now very careful about opening branches in mining areas and do not give encouragement in that respect. In mining lodges in Western Australia the expected sickness at the last valuation of friendly societies was 19,249 weeks and the actual sickness experienced was 30,298 weeks, being 57% in excess of expectations, whilst the other lodges were normal. A number of miners are on the lodge funds practically for life as the result of miners' phthisis. An inquiry into the operation of the Mine Workers' Relief Fund in Western Australia disclosed the fact that the average age of incapacity as a result of miners' phthisis was fifty-one years, the average number of years employed in the mining industry being 26.5. Members residing in farming districts are the best risks from a friendly society standpoint; in manufacturing centres the sickness experience is high, whilst in timber areas the payments are heavy owing to the numerous accidents to members. This fact emphasizes the necessity for a national scheme, as serious objection is raised to sectional schemes under which those with heavy sickness experience receive lower benefits, whilst others with better experience are able to accumulate huge reserves and to pay higher benefits for the same rate of contribution. The essential basis of a national insurance scheme is the even distribution of the risks amongst all insured members in one collective group.

Sickness Benefits Available.

The sickness benefits provided by the friendly societies with a total membership of 524,326 operating in Australia are generally fairly similar as to the amount of benefit payable per week and as to the period during which such benefit is payable. The rates of sick pay granted per week are generally the same to-day as they were over forty years ago. The period of twenty-six weeks during which each of the various rates of sick benefit is paid, is adopted practically by all societies and has been the same for very many years. Male members are entitled according to the society to which they belong, to from 20s. to 22s. 6d. per week sick pay for the first twenty-six weeks' sickness; from 10s. to 22s. 6d. per week for the second period of twenty-six weeks; from 5s. to 10s. per week for the third period of twenty-six weeks and thereafter 5s. per week so long as the illness continues. The majority of the societies pay at the lower rates quoted for each period, the higher rates being paid by a few societies only. Female members are usually entitled to half benefits, for which they pay half contributions. Juveniles are seldom eligible for a sickness benefit.

The maximum sickness benefit payable per week is laid down by the Friendly Societies Act in each State, *videlicet* New South Wales £2 2s., Victoria £3, Queensland £2, South Australia £1, Western Australia £3, Tasmania £1 1s.. In some societies members may contribute for additional sickness benefits where the maximum provided by the Act is in excess of that provided under the rules as ordinary sickness benefit, but such provision has not been much

availed of by members to date, although there is an indication that it will become more popular as the members become more fully aware of the provision. The Government Actuary decides what benefits shall be paid on the basis of the contribution payable. The rate of contribution varies with the age of the member when joining the society and no loading is made on account of the risk of special occupations. There are instances where persons are members of more than one friendly society and eligible for the sickness benefits of each society and occasionally of some other benefit fund also. The total amount of benefit payable or the period during which benefit is payable, is limited by the societies; after having received full sickness benefit a member cannot draw on the sickness fund again for a period of usually one year. It is undesirable that any such restriction should be placed in a national insurance scheme. A member is not eligible for benefits when he is unfinancial and in some cases he is penalized for a period of one month after again becoming financial before he is re-entitled to sickness benefit. The societies generally have benevolent funds available for the purpose of assisting a member during periods when he is owing to unfortunate circumstances unable to pay his contributions, although no provision for this exists in the rules and no member can make any claim to such funds.

A member of a trade union with provision for a benefit fund may voluntarily contribute for such benefits if he so desires, but only a small percentage do so. Sickness benefit is provided in a few unions only and when available generally ranges from 10s. to 20s. per week for the first six months' incapacity, 5s. to 10s. per week for the second six months and 5s. per week for a further period of from six months to one year, after which the liability to provide sickness benefit ceases. The contributions payable for such benefits are not actuarially certified as adequate and the funds are not supervized by the Government Actuary, with the result that they are not generally maintained on solvent lines.

In a few friendly societies members are entitled to sickness benefit from the day of joining, but in the majority of cases a member is not entitled to full sickness benefit during a probationary period, which varies from three to twelve months from the day when he becomes a member, only half benefits being paid during this probationary period. This basis has been adopted by the actuaries in their calculation of the rates of contributions and has been the custom for many years past, no strong opposition having been made to the system. The principle of paying full benefits to members immediately upon their joining is opposed by several societies, as members may become unfinancial in one society and then drift into another, thus being immediately eligible for benefits. Under national insurance in England no benefit is paid for the first three days of sickness and for this period, so it is stated, the members in many cases avail themselves of the benefits of the voluntary mutual associations. Under the additional benefit schemes in England it is possible for an approved society to pay sickness benefit from the first day, if members so desire, but that there is no general demand for such payment is indicated by the fact that less than 1% of the societies have elected to make sickness benefit available from the first day of sickness. An analysis of the sickness statistics of one society for four years subsequent to the institution of the *Workers' Compensation Act* in Australia revealed the fact that the number of members receiving sick pay for two, three or four day periods subsequent to the Act coming into operation was considerably less than previously. From the evidence available with respect to duration of sickness, it appears that 7% of the cases of sickness amongst friendly society members were under one weeks' duration.

Sick pay for a limited period at full salary rates with reductions in pay for continued sickness is provided in the various Government services in Australia, while financial and other institutions employing large staffs usually grant limited periods of sick leave on full pay. Sickness of a permanent character is also provided for under certain conditions under the Commonwealth invalid pension scheme. Government subsidies in a few instances are paid to approved schemes for providing relief for the sufferers from certain industrial diseases, where incapacity is attributable to the industry concerned. The State Governments also provide funds for charitable relief of those in distressed circumstances, as the result of sickness or of other causes. Some insurance companies issue policies insuring the holder against sickness and accident.

Adequacy of Existing Sickness Benefits.

The average sickness benefits of friendly societies and the period during which each benefit is payable, have as previously indicated been in operation for many years and owing to the considerable increase in the cost of living in recent years these benefits have become of considerably less value for the purpose intended and are inadequate for the requirements of the present time, although actuarially certified as adequate for the contributions paid. Some larger amount is required under present conditions to provide the relief for which the benefits are intended. The smallness of the sickness benefit has been stated as one of the reasons why friendly societies are not attracting so many new members today. The intention of the provision of such benefit is not to make available an adequate amount to maintain the member of the society during the period of his incapacity, but to assist him during such period and if the benefit payable were considered the only available financial resources of a member it would undoubtedly be inadequate for all requirements. The same rate of benefit is paid to married and single adult members, as they both pay the same rate of contributions and it has been suggested that some consideration should be given to the question of equitably providing for the additional responsibilities of the married man with dependants. The payment of a sick benefit above £1 per week to young unmarried men, it is stated, has resulted in malingering, especially where facilities are readily available for joining more than one society. A member of a friendly society after the probationary period of membership of six or twelve months has the same financial standing as a member of many years, as both may become unfinancial after the same period of arrears in the payment of contributions. Several societies have indicated their desires that members' contributions should cease at age sixty-five; this is at present provided for to a certain extent by the Government subvention scheme in New South Wales. Under that scheme of subvention the State Government pays half the cost of sick pay granted after twelve months' continuous sickness in respect of male members under age sixty-five and of female members under age sixty, the whole cost of sick pay to male members age sixty-five and over and to females age sixty and over provided that the amount payable by the State does not exceed 5s. per week per sick member, an amount equal to the total contributions for medical benefits in respect of aged members and to assure the claim of a funeral benefit not exceeding £50. In the year 1922 £43,000 was paid by the Government, making a total subvention of £308,000 since the scheme was instituted in 1908. The subvention is looked upon by the societies with considerable favour, as it is of great assistance to aged members who have paid contributions for many years. In national insurance schemes in other countries it has not been the intention to provide an amount which will meet all the wage-earner's requirements, but to provide for a benefit which will relieve him of the need for other forms of assistance.

Malingering for Benefits.

A certain amount of malingering, so it is stated, occurs amongst members of friendly societies in order to obtain sick pay benefits, although such malingering is difficult to detect. Various preventive measures have been instituted and in instances where special committees were appointed to deal with this question, the organized supervision is stated to have reduced the amount of sick pay in a remarkable degree. The societies depend chiefly upon their secretaries and sick visitors to prevent malingering and very little is experienced where an adequate system of sick visitors is in operation. A person may belong to

more than one society and to other benefit organizations, with the result, it is stated, that some have been able to draw more in benefits than their ordinary income. The experience of friendly societies show that when people join more than one society they are seeking sick pay benefits in particular. There is not much inducement, however, in the amount of friendly society benefit for a member to malinger in order to draw sick pay, as in practically every case where a married man leaves his work and goes on the sick fund he loses money. It has been suggested that under the German insurance scheme, notwithstanding improving medical and surgical methods, the duration of cure in some ailments and accidents is greater than it was in pre-insurance days and that under the Dutch system there also appears to be an objective aggravation of ill health, but this may be due to the fact that national insurance enables a member to receive more adequate treatment than formerly. In Great Britain special whole-time medical referees are appointed, to whom doubtful cases are referred and it should be possible under Government supervision of a national insurance scheme in Australia to provide adequate machinery which will safeguard the fund against any irregular claims for benefits.

(To be Continued.)

Correspondence.

RADIUM IN THE TREATMENT OF MENORRHAGIA.

SIR: It was with much pleasure I read the article of Dr. Rupert Magarey, on the treatment of menorrhagia by radium, published in the journal of the fourth instant. I agree with him that radium is a very valuable addition to the armamentarium of the gynæcologist and regret that its usefulness is not more widely known amongst the profession.

I have been using radium in connexion with my gynæcological work during the past two years though in somewhat larger doses than Dr. Magarey. The results that I have obtained, have been most happy and very interesting.

I hope at some future date to publish a *résumé* of some of my cases.

Yours, etc.,

ALBERT H. HUGHES.

71, Collins Street, Melbourne,
April 13, 1925.

A DISCLAIMER.

SIR: In the current number of THE MEDICAL JOURNAL OF AUSTRALIA, on page 336, there appears an address, entitled "Absent Friends," by A. Norman McArthur, M.B., B.S., *et cetera*.

In one paragraph there is reference to a "carpenter passing Watson's, read a window advertisement," *et cetera*.

For fear that some members of the British Medical Association might consider that this reference has to do with our Company, we beg to advise that no such advertisement appears on the windows or elsewhere of our premises at any of our offices in Australia or New Zealand.

We sincerely trust that some publicity might be given in the columns of the journal, which would make our position quite clear.

We beg to thank you in anticipation, for any help you can give us in connexion with this matter.

Yours, etc.,

J. P. TRAINOR,
Manager, W. Watson and Sons, Limited.

15, Castlereagh Street, Sydney,
April 7, 1925.

THE DANGERS OF THE CHARLATAN.

SIR: How much longer will this noble profession of ours content itself with its attitude of cynical and superior aloofness towards the hordes of charlatans who have recently flooded our country?

Almost every village in Australia is visited at regular intervals by these imposters who are not only permitted by the laws of the land to commit barefaced robbery, but who are also guilty of wholesale murder.

How many cases of cancer, syphilis *et cetera* which have been "cured" by quacks, come to us when it is too late for effective treatment? Nevertheless we are too superior and puffed up with professional etiquette to enlighten the public and enforce due punishment.

The great masses of the people in the world today have no originality or independence of thought, but are mere subjective individualities who are befooled and exploited by these gentlemen who cunningly trade on the credulity and imagination of a world of superstitious neurotics.

And worse still for this era of enlightenment is the fact that 90% of these fortune hunters are foreigners, with the primitive "heathen Chinee" well in the van.

The medical profession in Australia is on a very high standard and it would be deplorable if our country, as is now the case in America, should become overrun by thousands of these quacks who by proclaiming nostrums and infallible remedies for every disease, completely disorganize the medical profession in their sincere efforts to give honest and efficient treatment; and unless drastic action be taken by our Association, such a state of affairs is inevitable here.

Furthermore, it should be our duty to prevent this wanton sacrifice of lives by enforcing legislation against these imposters not in the interest of the members of our profession, but in the interest of suffering humanity.

Yours, etc.,

L. J. JARVIS NYE.

Atherton, North Queensland,
April 7, 1925.

Proceedings of the Australian Medical Boards.

VICTORIA.

THE undermentioned have been registered under the provisions of the *Medical Act, 1915*, as duly qualified medical practitioners:

Fleming, William Albert, M.B., B.S., 1922 (Univ. Melbourne), St. George's Road, North Fitzroy.

Gillies, Gladstone Russell, M.B., Ch.M., 1924 (Univ. Sydney), c.o. The Secretary, Victorian Branch, British Medical Association, East Melbourne.

Additional Diploma Registered.

Penington, Geoffrey Alfred, M.D., 1924 (Univ. Melbourne).

Books Received.

AN INTRODUCTION TO DERMATOLOGY, by Sir Norman Walker; Eighth Edition; 1925. Edinburgh: W. Green & Son, Limited. Sydney: Angus & Robertson, Limited. Demy 8vo., pp. xviii. + 373.

PRACTICAL THERAPEUTICS, by Hobart Amory Hare, B.Sc., M.D., LL.D.; Nineteenth Edition, Enlarged, Thoroughly Revised and Largely Rewritten; 1925. Philadelphia and New York: Lea & Febiger. Royal 8vo., pp. x. + 1,061. Price: $7.

A MANUAL OF GYNÆCOLOGY: FOR STUDENTS AND PRACTITIONERS, by Samuel J. Cameron, M.B., B.Ch. (Glasgow), F.R.P.S.G.; Third Edition; 1925. London: Edward Arnold & Company. Demy 8vo., pp. xix. + 651, with illustrations. Price: 25s. net.

A BELOVED PHYSICIAN: SOME MEMORIES OF DR. GEORGE RENNIE. Sydney: R. Dey, Son & Company. Foolscap 8vo., pp. 78,.

SURGICAL PATHOLOGY, by William Boyd, M.D., M.R.C.P. (Edinburgh), F.R.C.S.; 1925. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 837, with 349 illustrations and 13 coloured plates. Price: 50s.

Medical Appointments.

The following appointments have been made at the Alfred Hospital, Melbourne: Dr. A. V. M. Anderson (B.M.A.), Dr. Henry Laurie (B.M.A.), Dr. J. F. Mackeddie (B.M.A.) and Dr. J. P. Major (B.M.A.) as Physicians to In-Patients; Dr. R. C. Brown (B.M.A.), Dr. J. S. Buchanan (B.M.A.), Dr. Fay Maclure (B.M.A.) and Dr. Balcombe Quick (B.M.A.) as Surgeons to In-Patients; Dr. G. A. Birnie (B.M.A.), Dr. W. S. Newton (B.M.A.), Dr. M. D. Silberberg (B.M.A.) and Dr. W. E. Summons (B.M.A.) as Physicians to Out-Patients; Dr. J. Kennedy (B.M.A.), Dr. R. St. Clair Steuart (B.M.A.), Dr. A. J. Trinca (B.M.A.) and Dr. H. C. Trumble (B.M.A.) as Surgeons to Out-Patients; Dr. Bryan Foster (B.M.A.) and Dr. H. Barry Thomson (B.M.A.) as Specialists for Diseases of the Ear, Nose and Throat; Dr. J. Ringland Anderson (B.M.A.) as Specialist for Diseases of the Eye; Dr. S. W. Shields (B.M.A.) as Specialist for Diseases of the Skin; Dr. Robert W. Fowler (B.M.A.) as Gynæcologist; Dr. A. Cook (B.M.A.), Dr. Carlton A. Ellis (B.M.A.) and Dr. H. C. Trumble (B.M.A.) as Surgeons for Venereal Diseases Clinic; Dr. F. Marjorie Hughes (B.M.A.), Dr. G. L. Lillies (B.M.A.), Dr. A. Marie van Putten Stephens (B.M.A.) and Dr. Gweneth Wisewould (B.M.A.) as Anæsthetists; Dr. S. S. Argyle (B.M.A.) as Director of Radiology; Dr. C. E. Dennis (B.M.A.) and Dr. M. F. Emrys-Jones (B.M.A.) as Radiologists; Dr. W. S. Laurie (B.M.A.) and Dr. F. K. Norris (B.M.A.) as Physicians for Diseases of Children; Dr. H. C. Colville (B.M.A.) as Surgeon to Children's Department; Dr. C. W. Adey (B.M.A.), Dr. M. Ashkenasy (B.M.A.), Dr. J. R. Bell (B.M.A.), Dr. J. F Chambers (B.M.A.), Dr. W. K. Davenport (B.M.A.), Dr. J. E. Gillespie (B.M.A.), Dr. K. H. Hallam (B.M.A.), Dr. F. L. Trinca (B.M.A.), Dr. J. W. Young (B.M.A.) as Clinical Assistants to Physicians to Out-Patients; Dr. C. E. Sutherland (B.M.A.) was also appointed Clinical Assistant during the temporary absence as Acting Out-Patient Physician of Dr. Bell; Dr. D. Bird (B.M.A.), Dr. S. G. L. Catchlove (B.M.A.), Dr. J. L. Diggle (B.M.A.), Dr. G. E. Foreman (B.M.A.), Dr. J. Gray (B.M.A.), Dr. J. Love (B.M.A.), Dr. F. M. Read (B.M.A.), Dr. R. H. Small (B.M.A.) and Dr. D. C. Worch (B.M.A.) as Clinical Assistants to Surgeons to Out-Patients; Dr. A. Blaubaum (B.M.A.), Dr. Carlton A. Ellis (B.M.A.) and Dr. T. G. Wynne (B.M.A.) as Clinical Assistants to Specialists, Ear, Nose and Throat; Dr. C. N. Finn (B.M.A.) and Dr. E. M. G. Glassford (B.M.A.) as Clinical Assistants to Specialist for Diseases of the Eye; Dr. E. S. Joske (B.M.A.) as Clinical Assistant to Specialist for Diseases of the Skin; Dr. C. S. Wood (B.M.A.) as Clinical Assistant to Gynæcologist; Dr. A. B. Corkill (B.M.A.), Dr. R. H. Small (B.M.A.) and Dr. J. W. Young (B.M.A.) as Clinical Assistants to Surgeons for Venereal Diseases Clinic; Dr. I. Blaubaum (B.M.A.) and Dr. R. G. Stott (B.M.A.) as Clinical Assistants to Physicians for Diseases of Children; Dr. D. L. Yoffa (B.M.A.) as Clinical Assistant to Surgeon to Children; Dr. C. W. Adey (B.M.A.) was appointed Physician to Out-Patients for a period of eight months.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi..

ROYAL HOSPITAL FOR WOMEN, PADDINGTON, SYDNEY: (a) Honorary Surgeon, (b) Honorary Assistant Surgeon.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C..

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellow's Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

MAY 5.—Tasmanian Branch, B.M.A.: Council.
MAY 6.—Victorian Branch, B.M.A.: Branch.
MAY 8.—Queensland Branch, B.M.A.: Council.
MAY 12.—New South Wales Branch, B.M.A.: Ethics Committee.
MAY 12.—Tasmanian Branch, B.M.A.: Branch.
MAY 14.—New South Wales Branch, B.M.A.: Clinical Meeting.
MAY 14.—Victorian Branch, B.M.A.: Council; Election of Representative on Representative Body.
MAY 15.—Western Australian Branch, B.M.A.: Council.
MAY 19.—Tasmanian Branch, B.M.A.: Council.
MAY 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
MAY 19.—Illawarra Suburbs Medical Association, New South Wales.
MAY 20.—Western Australian Branch, B.M.A.: Branch.
MAY 21.—South Australian Branch, B.M.A.: Council.
MAY 22.—Queensland Branch, B.M.A.: Council.
MAY 26.—New South Wales Branch, B.M.A.: Medical Politics Committee: Organization and Science Committee.
MAY 27.—Victorian Branch, B.M.A.: Council.
MAY 28.—New South Wales Branch, B.M.A.: Branch.
MAY 28.—South Australian Branch, B.M.A.: Branch.
MAY 29.—South Eastern Medical Association, New South Wales.
JUNE 2.—Tasmanian Branch, B.M.A.: Council.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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